System Board
User's Manual

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FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables must be used in order to comply with the emission limits.

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Warranty

1. Warranty does not cover damages or failures that arised from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.

2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.

3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.

4. We will not be liable for any indirect, special, incidental or consequencial damages to the product that has been modified or altered.

Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.

2. Wear an antistatic wrist strap.

3. Do all preparation work on a static-free surface.

4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.

5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

Important:
Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

Safety Measures

To avoid damage to the system:
- Use the correct AC input voltage range.

To reduce the risk of electric shock:
- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

Battery:
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

About the Package

The system board package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- ☑ One system board
- ☑ One IDE cable
- ☑ Two Serial ATA data cables
- ☑ One power cable with 2 Serial ATA power connectors
- ☑ One I/O shield
- ☑ One DVD
- ☑ One user's manual

The system board and accessories in the package may not come similar to the information listed above. This may differ in accordance to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

Before Using the System Board

Before using the system board, prepare basic system components.

If you are installing the system board in a new system, you will need at least the following internal components.

- A CPU
- Memory module
- Storage devices such as hard disk drive, CD-ROM, etc.

You will also need external system peripherals you intend to use which will normally include at least a keyboard, a mouse and a video display monitor.

Chapter 1 - Introduction

Specifications

Processor	• LGA 775 socket for: - Intel® Core™2 Quad and Intel® Core™2 Duo • Supports Intel Enhanced Memory 64 Technology (EMT64T) • Supports Enhanced Intel SpeedStep Technology (EIST) • Supports Intel Hyper-Threading Technology • Supports 1333/1066/800MHz FSB
Chipset	• Intel® chipset - Northbridge: Intel® P45 Express chipset Intel® Fast Memory Access technology - Southbridge: Intel® ICH10R (LP BI P45-T2RS Elite) Intel® ICH10 (LP BI P45-T2S Elite)
System Memory	• Four 240-pin DDR2 DIMM sockets • Supports DDR2 1200(O.C.)/1066/800/667 MHz • Delivers up to 12.8Gb/s bandwidth • Supports dual channel (128-bit wide) memory interface • Supports non-ECC unbuffered DIMMs • Supports up to 16GB system memory Windows® 32-bit operating system is unable to accurately detect more than 4GB system memory. Therefore, if you are using this operating system, we strongly recommend that you install a less than 3GB system memory.
Expansion Slots	• 1 PCI Express (Gen 2) x16 slot • 3 PCI Express x1 slots • 2 PCI slots
BIOS	• Award BIOS • 8Mbit SPI flash BIOS • CMOS Reloaded
Audio	• Realtek ALC885 High Definition audio CODEC • 8-channel audio output • DAC SNR/ADC SNR of 106dB/101dB • Full-rate lossless content protection technology • Optical S/PDIF-out and coaxial RCA S/PDIF-out interfaces
LAN	• JMC250 PCIE Gigabit LAN controller • Fully compliant to IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX) and 802.3ab (1000BASE-T) standards
Serial ATA	• Supports up to 6 SATA devices • SATA speed up to 3Gb/s • Intel Matrix Storage technology • Intel ICH10R chip supports RAID 0, RAID 1, RAID 0+1 and RAID 5 (LP BI P45-T2RS Elite)
IDE	• JMicron JMB368 PCI Express to PATA host controller • Supports up to 2 UltraDMA 100Mbps IDE devices

Rear Panel I/O	• 1 mini-DIN-6 PS/2 mouse port • 1 mini-DIN-6 PS/2 keyboard port • 1 optical S/PDIF-out port • 1 coaxial RCA S/PDIF-out port • 6 USB 2.0/1.1 ports • 1 RJ45 LAN port • Center/subwoofer, rear R/L and side R/L jacks • Line-in, line-out (front R/L) and mic-in jacks
Internal I/O	• 3 connectors for 6 additional external USB 2.0 ports • 1 connector for an external COM port • 1 front audio connector • 1 CD-in connector • 1 IrDA connector • 6 Serial ATA connectors • 1 40-pin IDE connector • 1 floppy connector • 1 24-pin ATX power connector • 1 8-pin 12V power connector • 1 front panel connector • 4 fan connectors • 1 download flash BIOS connector
Power Management	• ACPI and OS Directed Power Management • ACPI STR (Suspend to RAM) function • Wake-On-PS/2 Keyboard/Mouse • Wake-On-USB Keyboard/Mouse • Wake-On-LAN • Wake-On-Ring • RTC timer to power-on the system • AC power failure recovery
Hardware Monitor	• Monitors CPU/system/Northbridge temperature and overheat alarm • Monitors Vcore/Vdimm/Vnb/VCC5/12V/V5sb/Vbat voltages • Monitors the speed of the cooling fans • CPU Overheat Protection function monitors CPU temperature and fan during system boot-up - automatic shutdown upon system overheat
PCB	• 4 layers, ATX form factor • 20.5cm (8.07”) x 30.5cm (12”)

Features

DDR2

DDR2 is a higher performance DDR technology whose data transfer rate delivers bandwidth of 4.3 GB per second and beyond. That is twice the speed of the conventional DDR without increasing its power consumption. DDR2 SDRAM modules work at 1.8V supply compared to 2.6V memory voltage for DDR modules. DDR2 also incorporates new innovations such as the On-Die Termination (ODT) as well as larger 4-bit pre-fetch against DDR which fetches 2 bits per clock cycle.

PCI Express Gen 2

PCI Express Gen 2 is a high bandwidth I/O infrastructure that possesses the ability to scale speeds by forming multiple lanes. The x16 PCI Express lane supports transfer rate up to 5Gb/s.

8CH High Definition Audio

The onboard Realtek ALC885 is a High Definition audio codec and the 6 audio jacks at the rear I/O panel provides 8-channel audio output for advanced 7.1-channel super surround sound audio system. ALC885 also supports S/PDIF output, allowing digital connections with DVD systems or other audio/video multimedia.

S/PDIF

S/PDIF is a standard audio file transfer format that transfers digital audio signals to a device without having to be converted first to an analog format. This prevents the quality of the audio signal from degrading whenever it is converted to analog. S/PDIF is usually found on digital audio equipment such as a DAT machine or audio processing device. The S/PDIF interface on the system board sends surround sound and 3D audio signal outputs to amplifiers and speakers and to digital recording devices like CD recorders.

Serial ATA with RAID

Serial ATA is a storage interface that is compliant with SATA 1.0 specification. It supports speed of up to 3Gb/s. Serial ATA improves hard drive performance faster than the standard parallel ATA whose data transfer rate is 100MB/s. The system board allows configuring RAID on Serial ATA devices. It supports RAID 0/1/0+1(10)/5.

Gigabit LAN

The JMC250 PCI Express Gigabit LAN chip supports up to 1Gbps data rate.

CMOS Reloaded

CMOS Reloaded is a technology that allows storing multiple user-defined BIOS settings by using the BIOS utility to save, load and name the settings. This is especially useful to overclockers who require saving a variety of overclocked settings and being able to conveniently switch between these settings simultaneously.

Genie BIOS

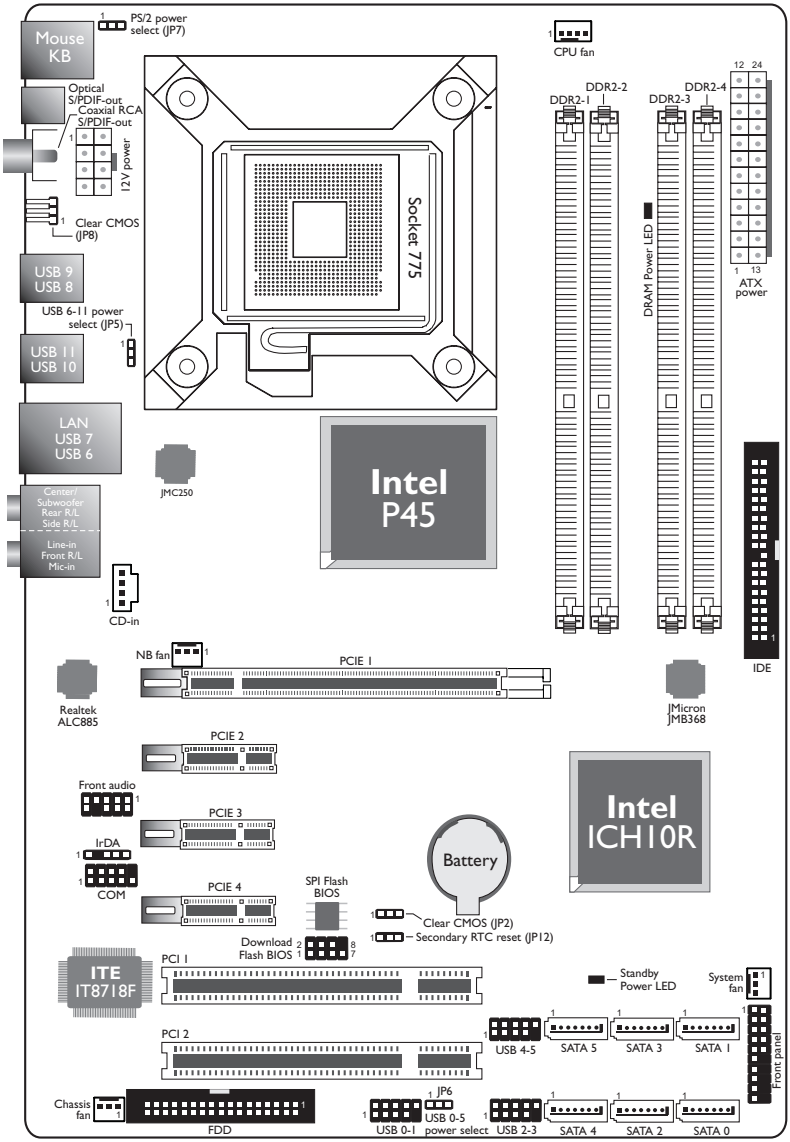
The options in Genie BIOS allows configuring the system to optimize system performance and overclock capability.

CPU Overheat Protection

CPU Overheat Protection has the capability of monitoring the CPU's temperature during system boot up. Once the CPU's temperature exceeded the temperature limit pre-defined by the CPU, the system will automatically shutdown. This preventive measure has been added to protect the CPU from damage and insure a safe computing environment.

Chapter 2 - Hardware Installation

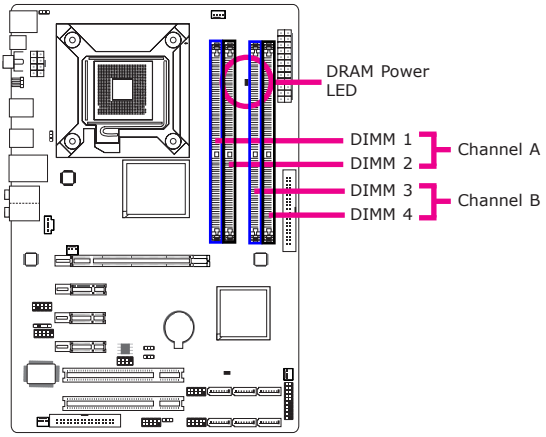
System Board Layout



Important:
Electrostatic discharge (ESD) can damage your system board, processor, disk drives, add-in boards, and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

System Memory

Important:
When the DRAM Power LED lit red, it indicates that power is present on the DIMM sockets. Power-off the PC then unplug the power cord prior to installing any memory modules. Failure to do so will cause severe damage to the motherboard and components.



The four DIMM sockets are divided into 2 channels:

Channel A - DIMM 1 and DIMM 2
Channel B - DIMM 3 and DIMM 4

The system board supports the following memory interface.

Single Channel (SC)

Data will be accessed in chunks of 64 bits (8B) from the memory channels.

Virtual Single Channel (VSC)

If both channels are populated with different memory configurations, the MCH defaults to Virtual Single Channel.

Dual Channel (DC)

Dual channel provides better system performance because it doubles the data transfer rate.

Dynamic Mode Addressing

This mode minimizes the overhead of opening/closing pages in memory banks allowing for row switching to be done less often.

Single Channel	DIMMs are on the same channel. DIMMs in a channel can be identical or completely different. Not all slots need to be populated.
Virtual Single Channel	DIMMs of different memory configurations are on different channels. Odd number of slots can be populated.
Dual Channel	DIMMs of the same memory configuration are on different channels.
Dynamic Mode Addressing	In single channel, requires even number or rows (side of the DIMM) populated. This mode can be enabled with 1 SS, 2 SS or 2 DS. In VSC mode, both channels must have identical row structure.

BIOS Setting

Configure the system memory in the Genie BIOS Setting submenu of the BIOS. Refer to chapter 3 for more information.

The table below lists the various optimal operating modes that should be configured for the memory channel operation.

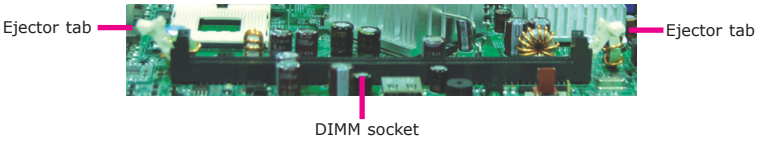
Config	DIMM 1	DIMM 2	DIMM 3	DIMM 4
No memory	E	E	E	E
Single channel A	P	E	E	E
Single channel A	P	P	E	E
Single channel A	E	P	E	E
Single channel B	E	E	P	E
Single channel B	E	E	P	P
Single channel B	E	E	E	P
Virtual single channel	E	P(**)	E	P(**)
Virtual single channel	E	P	P	E
Virtual single channel	E	P(**)	P	P(**)
Virtual single channel	P	E	E	P
Virtual single channel	P(**)	E	P(**)	E
Virtual single channel	p(**)	E	P(**)	P
Virtual single channel	P	P(**)	E	P(**)
Virtual single channel	P(**)	P	P(**)	E
Virtual single channel	P(**)	P(**)	P(**)	P(**)
Dual channel	E	P(*)(2,4)	E	P(*)(2,4)
Dual channel	P(*)(1,3)	E	P(*)(1,3)	E
Dual channel	P(*)(1,3)	P(*)(2,4)	P(*)(1,3)	P(*)(2,4)
Dynamic Mode Addressing	E	P(*)(2,4) DS	E	P(*)(2,4) DS
Dynamic Mode Addressing	P(*)(1,3) DS	E	P(*)(1,3) DS	E
Dynamic Mode Addressing	P(*)(1,3) DS	P(*)(2,4) DS	P(*)(1,3) DS	P(*)(2,4) DS
Dynamic Mode Addressing	E	P(*)(2,4) SS	E	P(*)(2,4) SS
Dynamic Mode Addressing	P(*)(1,3) SS	E	P(*)(1,3) SS	E
Dynamic Mode Addressing	P(*)(1,3) SS	P(*)(2,4) SS	P(*)(1,3) SS	P(*)(2,4) SS

P - denotes populated
E - denotes empty
* - denotes DIMMs are identical
** - denotes DIMMs are not identical
SS - denotes Single Sided DIMM
DS - denotes Double Sided DIMM
1, 2, 3 or 4 - denotes the DDR DIMM slot

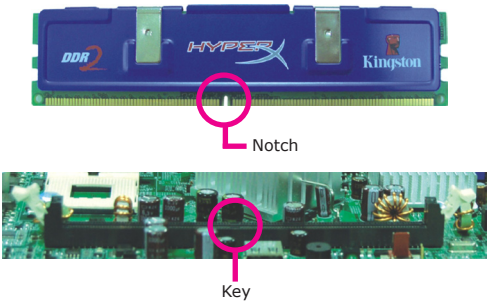
Installing the DIM Module

Note:
The system board used in the following illustrations may not resemble the actual board. These illustrations are for reference only.

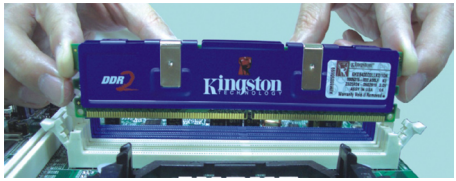
1. Make sure the PC and all other peripheral devices connected to it has been powered down.
2. Disconnect all power cords and cables.
3. Locate the DDR2 socket on the board.
4. Push the "ejector tabs" which are at the ends of the socket to the side.



5. Note how the module is keyed to the socket.



6. Grasping the module by its edges, position the module above the socket with the "notch" in the module aligned with the "key" on the socket. The keying mechanism ensures the module can be plugged into the socket in only one way.



7. Seat the module vertically, pressing it down firmly until it is completely seated in the socket.

8. The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.

CPU

The system board is equipped with a surface mount LGA 775 socket. This socket is exclusively designed for installing a LGA 775 packaged Intel CPU.

Important:

1. Before you proceed, make sure (1) the LGA775 socket comes with a protective cap, (2) the cap is not damaged and (3) the socket's contact pins are not bent. If the cap is missing or the cap and/or contact pins are damaged, contact your dealer immediately.
2. Make sure to keep the protective cap. RMA requests will be accepted and processed only if the LGA775 socket comes with the protective cap.

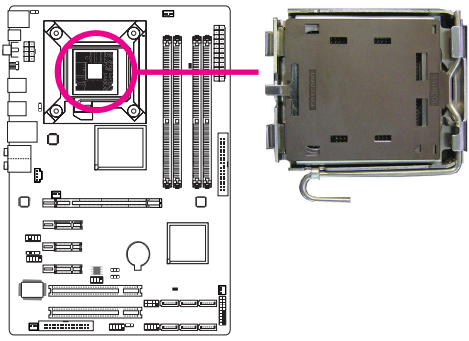
Installing the CPU

1. Make sure the PC and all other peripheral devices connected to it has been powered down.

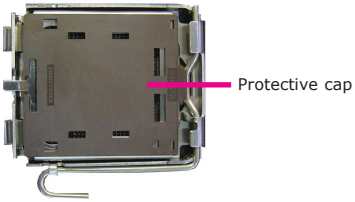
2. Disconnect all power cords and cables.

3. Locate the LGA 775 CPU socket on the system board.

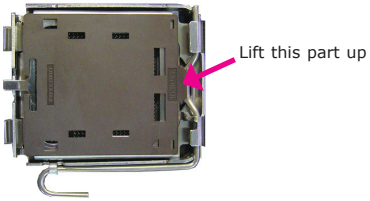
   Important:
   The CPU socket must not come in contact with anything other than the CPU. Avoid unnecessary exposure. Remove the protective cap only when you are about to install the CPU.



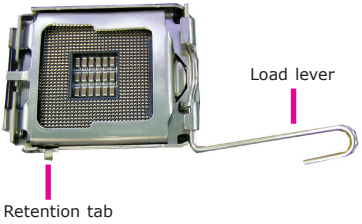
4. The CPU socket comes with a removable protective cap. The cap is used to protect the CPU socket against dust and harmful particles. Remove the protective cap only when you are about to install the CPU.



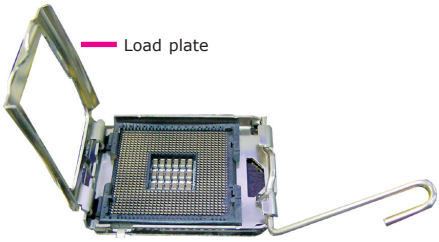
5. To remove the protective cap, lift the cap on the location pointed on the right photo.



6. Unlock the socket by pushing the load lever down, moving it sideways until it is released from the retention tab; then lift it up.

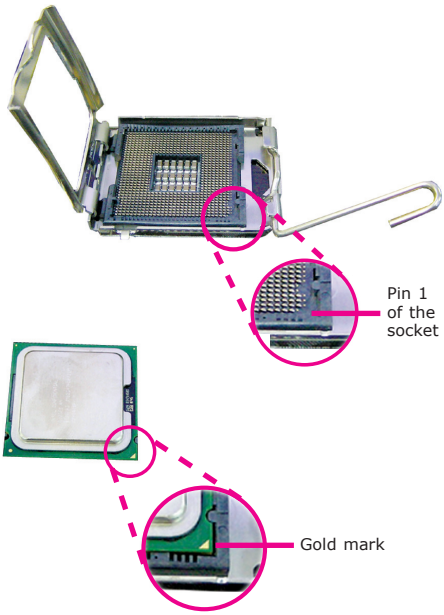


7. Life the load plate.



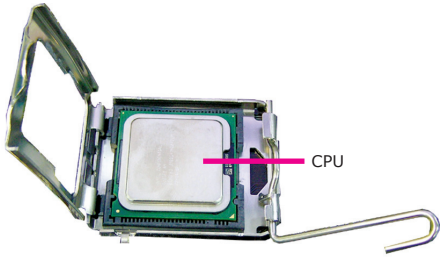
8. Position the CPU above the socket. The gold mark on the CPU must align with pin 1 of the CPU socket.

Important:
Handle the CPU by its edges and avoid touching the pins.

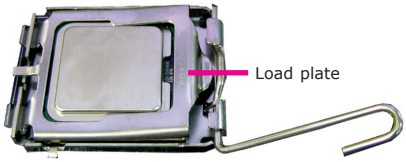


9. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force.

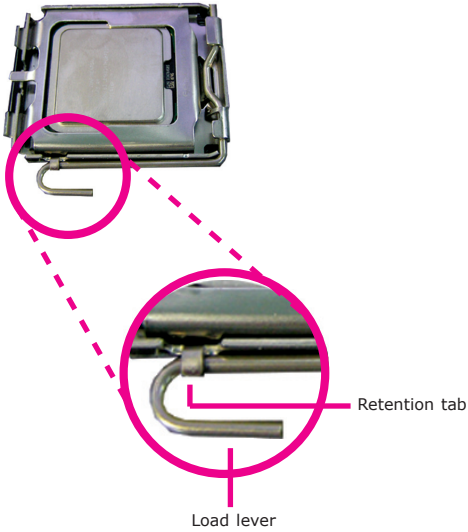
Important:
Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.



10. Close the load plate.



11. Push the load lever down to lock the socket. The lever should hook onto the retention tab to indicate that the CPU is completely secured in the socket.



Installing the Fan and Heat Sink

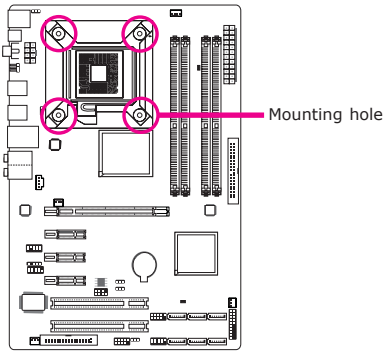
The CPU must be kept cool by using a CPU fan with heat sink. Without sufficient air circulation across the CPU and heat sink, the CPU will overheat damaging both the CPU and system board.

Note:
A boxed Intel® processor already includes the CPU fan and heat sink assembly. If your CPU was purchased separately, make sure to only use Intel®-certified fan and heat sink.

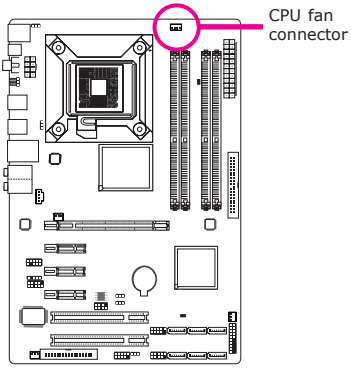
1. Before you install the fan / heat sink, you must apply a thermal paste onto the top of the CPU. The thermal paste is usually supplied when you purchase the fan / heat sink assembly. Do not spread the paste all over the surface. When you later place the heat sink on top of the CPU, the compound will disperse evenly.

   Some heat sinks come with a patch of pre-applied thermal paste. Do not apply thermal paste if the fan / heat sink already has a patch of thermal paste on its underside. Peel the strip that covers the paste before you place the fan / heat sink on top of the CPU.

2. Place the heat sink on top of the CPU. The 4 push-pins around the heat sink, which are used to secure the heat sink onto the system board, must match the 4 mounting holes around the socket.

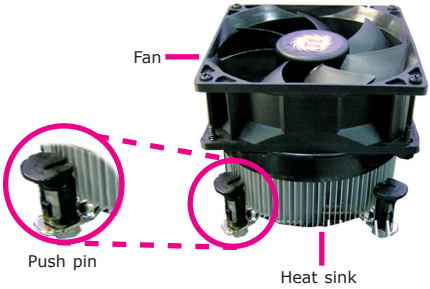


3. Orient the heat sink such that the CPU fan's cable is nearest the CPU fan connector.



4. Rotate each push-pin according to the direction of the arrow shown on top of the pin.

   Push down two pushpins that are diagonally across the heat sink. Perform the same procedure for the other two push-pins.



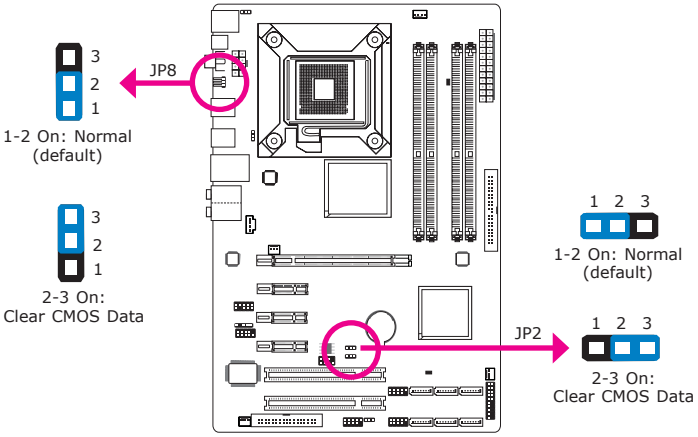
5. Connect the CPU fan's cable connector to the CPU fan connector on the system board.

Northbridge Heat Sink

The Northbridge must be kept cool by using a heat sink. The heat sink will dissipate heat generated by the Northbridge. Without the heat sink, the Northbridge will overheat damaging both the Northbridge and the system board.

Jumper Settings

Clear CMOS Data



If you encounter the following,

a) CMOS data becomes corrupted.
b) You forgot the supervisor or user password.
c) The overclocked settings in the BIOS resulted to the system's instability or caused system boot up problems.

you can reconfigure the system with the default values stored in the ROM BIOS.

JP8 is accessible from the rear panel of the system. This provides convenience by allowing you to clear the CMOS without having to remove the chassis cover.

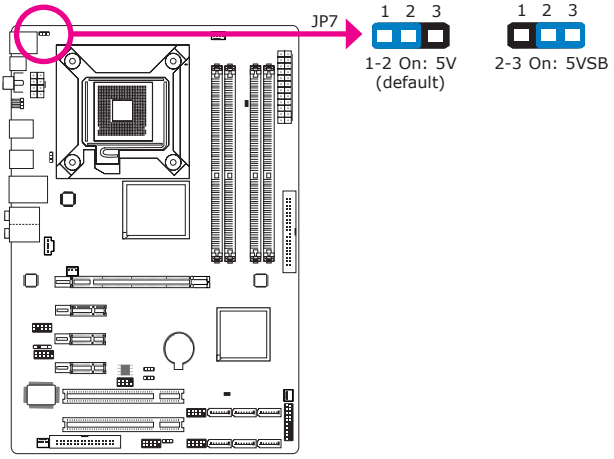
To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system then unplug the power cord.

2. Set JP2/JP8 pins 2 and 3 to On. Wait for a few seconds and set JP2/JP8 back to its default setting, pins 1 and 2 On.

3. Now plug the power cord then power-on the system.

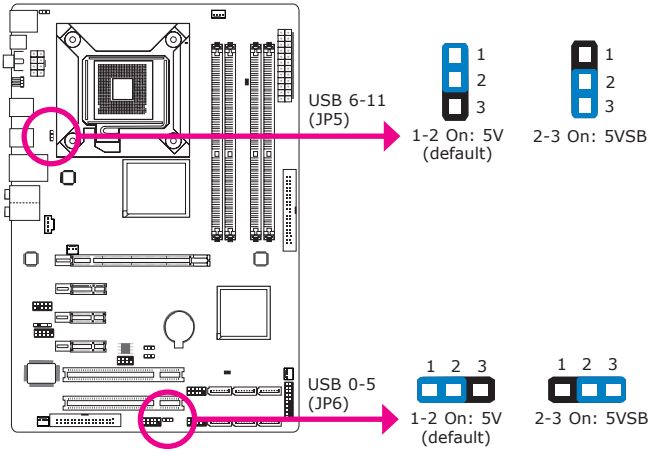
PS/2 Power Select



Selecting 5VSB will allow you to use the PS/2 keyboard or PS/2 mouse to wake up the system.

Important:
The 5VSB power source of your power supply must support ≥720mA.

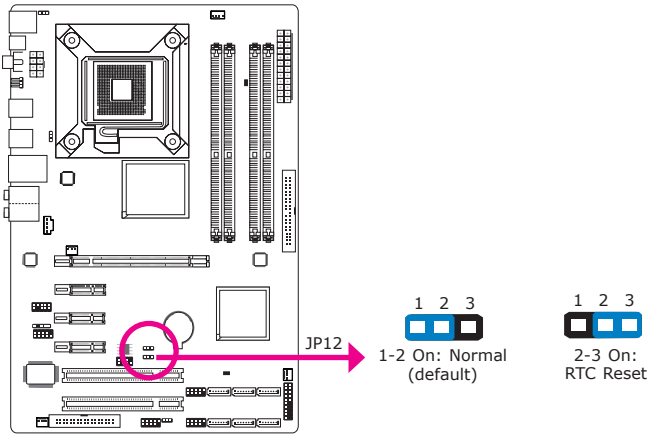
USB Power Select



Selecting 5VSB will allow you to use the USB keyboard or USB mouse to wake up the system.

Important:
The 5VSB power source of your power supply must support ≥1.5A (2 devices) or ≥2A (3 or more devices).

Secondary RTC Reset

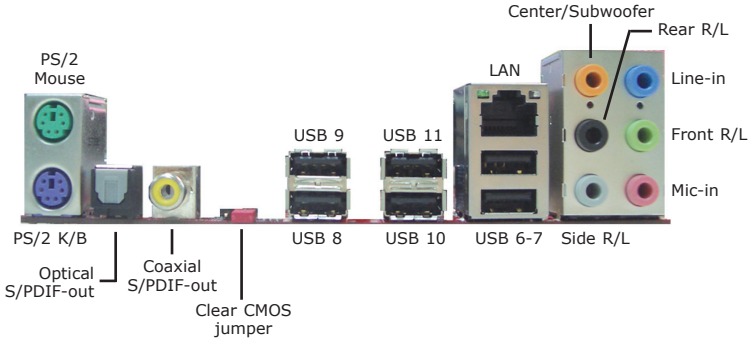


When the RTC battery is removed, this jumper resets the manageability register bits in the RTC.

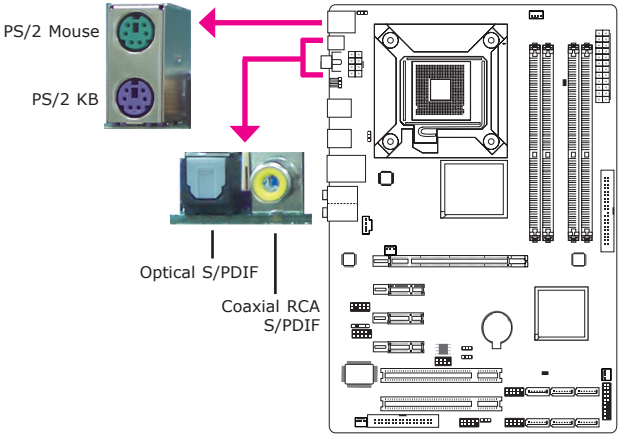
Note:

1. The SRTCRST# input must always be high when all other RTC power planes are on.
2. In the case where the RTC battery is dead or missing on the platform, the SRTCRST# pin must rise before the RSMRST# pin.

Rear Panel I/O Ports



PS/2 Ports and S/PDIF Ports



PS/2 Mouse and PS/2 Keyboard Ports

These ports are used to connect a PS/2 mouse and a PS/2 keyboard.

Optical S/PDIF

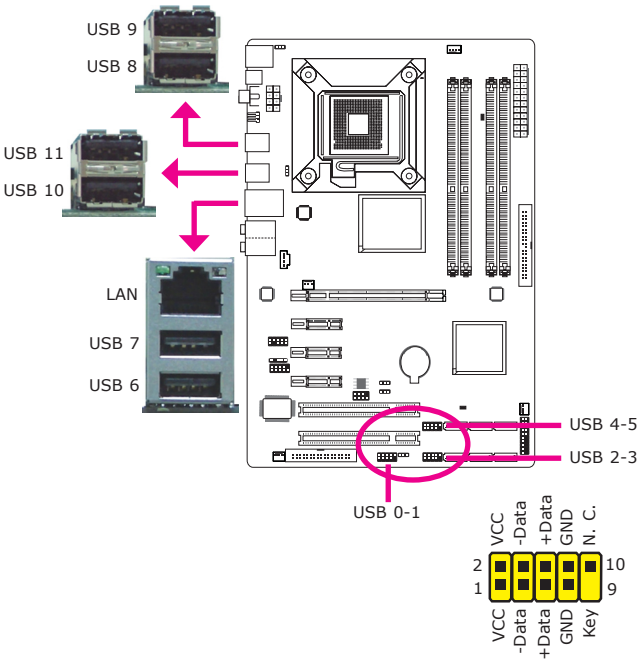
The optical S/PDIF jack is used to connect an external audio output device using an optical S/PDIF cable.

Coaxial RCA S/PDIF

The coaxial RCA S/PDIF jack is used to connect an external audio output device using a coaxial S/PDIF cable.

Important:
DO NOT use optical S/PDIF and Coaxial RCA S/PDIF at the same time.

USB and LAN Ports



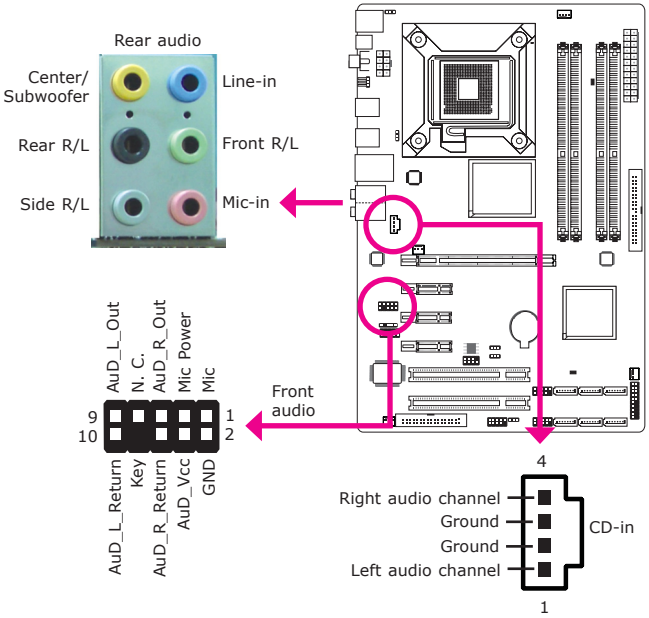
USB

The USB ports are used to connect USB 2.0/1.1 devices. The 10-pin connectors allow you to connect 6 additional USB 2.0/1.1 ports. Your USB ports may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then connect the USB port cables to these connectors.

LAN

The LAN port allows the system board to connect to a local area network by means of a network hub.

Audio and CD-In



Rear Panel Audio

- Center/Subwoofer Jack (Orange)
  This jack is used to connect to the center and subwoofer speakers of the audio system.

- Rear Right/Left Jack (Black)
  This jack is used to connect to the rear right and rear left speakers of the audio system.

- Side Right/Left Jack (Gray)
  This jack is used to connect to the side left and side right speakers of the audio system.

- Line-in (Light Blue)
  This jack is used to connect any audio devices such as Hi-fi set, CD player, tape player, AM/FM radio tuner, synthesizer, etc.

- Line-out - Front Right/Left Jack (Lime)
  This jack is used to connect to the front right and front left speakers of the audio system.

- Mic-in Jack (Pink)
  This jack is used to connect an external microphone.

Front Audio

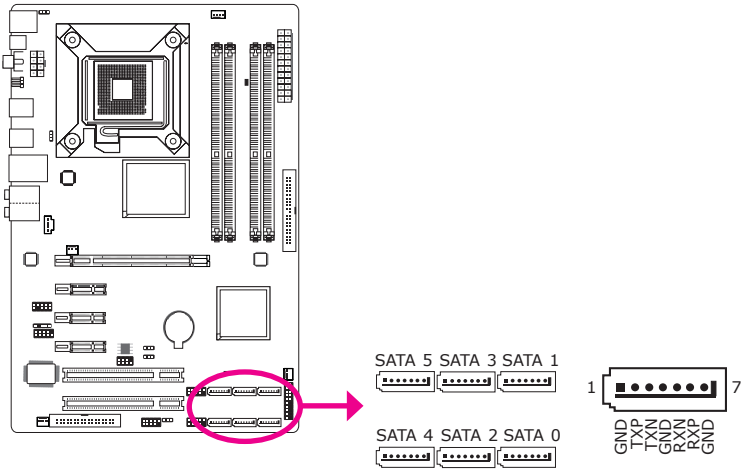
The front audio connector is used to connect to the line-out and mic-in jacks that are at the front panel of your system.

CD-in

The CD-in connector is used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

Internal I/O Connectors

Serial ATA Connectors

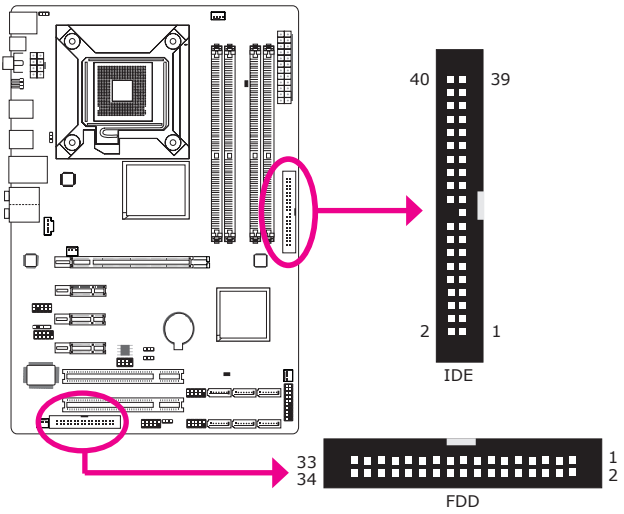


The Serial ATA (SATA) connectors are used to connect Serial ATA drives. Connect one end of the Serial ATA cable to a Serial ATA connector and the other end to your Serial ATA device.

Configuring RAID (LP BI P45-T2RS Elite)

Refer to the RAID chapter in this manual for more information about creating RAID on Serial ATA drives.

FDD Connector and IDE Connector



FDD Connector

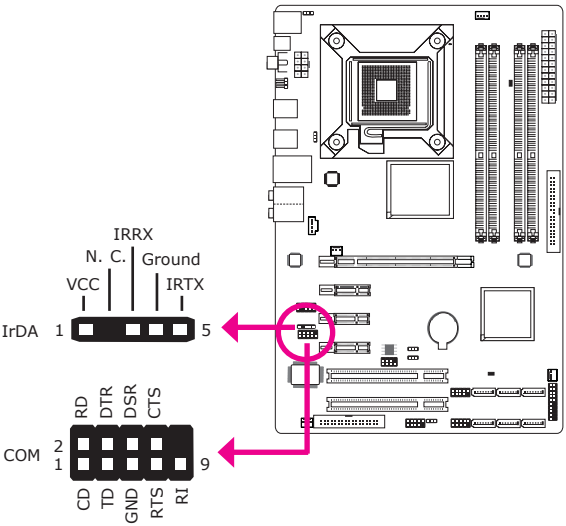
The floppy disk drive connector is used to connect a floppy drive. Insert one end of the floppy cable into this connector and the other end-most connector to the floppy drive. The colored edge of the cable should align with pin 1 of this connector.

IDE Connector

The IDE disk drive connector is used to connect 2 IDE disk drives. An IDE cable have 3 connectors on them, one that plugs into this connector and the other 2 connects to IDE devices. The connector at the end of the cable is for the Master drive and the connector in the middle of the cable is for the Slave drive. The colored edge of the cable should align with pin 1 of this connector.

Note:
When using two IDE drives, one must be set as the master and the other as the slave. Follow the instructions provided by the drive manufacturer for setting the jumpers and/or switches on the drives.

IrDA and COM (Serial) Connectors



IrDA

Connect the cable connector from your IrDA module to the IrDA connector.

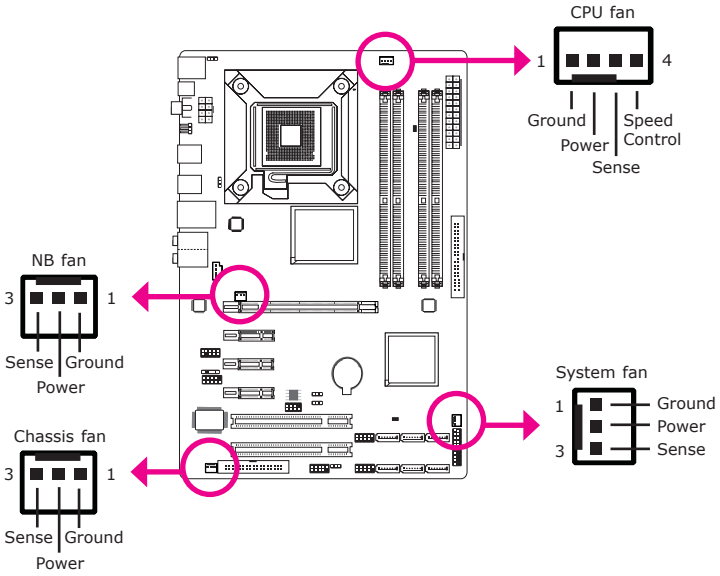
Note:
The sequence of the pin functions on some IrDA cable may be reversed from the pin function defined on the system board. Make sure to connect the cable to the IrDA connector according to their pin functions.

You may need to install the proper drivers in your operating system to use the IrDA function. Refer to your operating system's manual or documentation for more information.

COM (Serial)

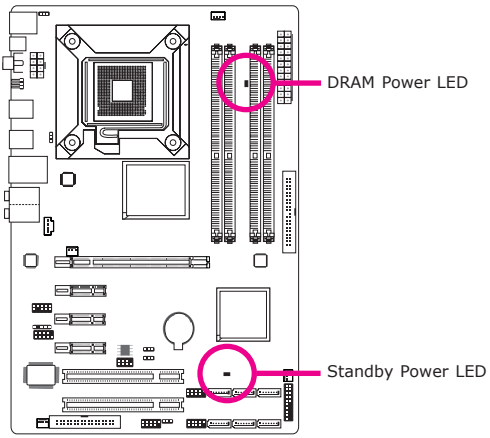
The COM (Serial) connector is used to connect modems, serial printers, remote display terminals, or other serial devices. Your COM port may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then connect the serial port cable to this connector. The colored edge of the cable should align with pin 1 of this connector.

Cooling Fan Connectors



These fan connectors are used to connect cooling fans. Cooling fans will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

LEDs



DRAM Power LED

This LED will light when the system's power is on.

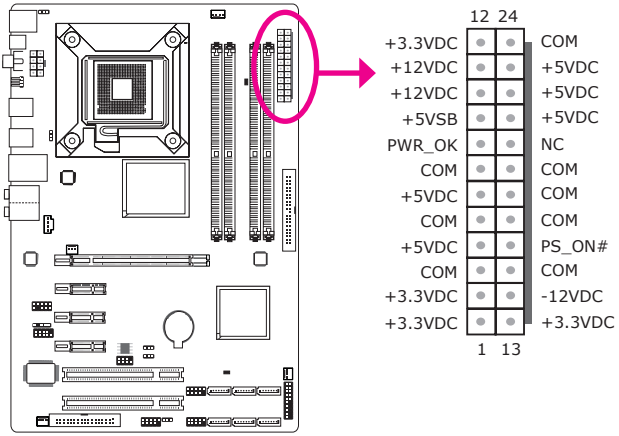
Standby Power LED

This LED will light when the system is in the standby mode.

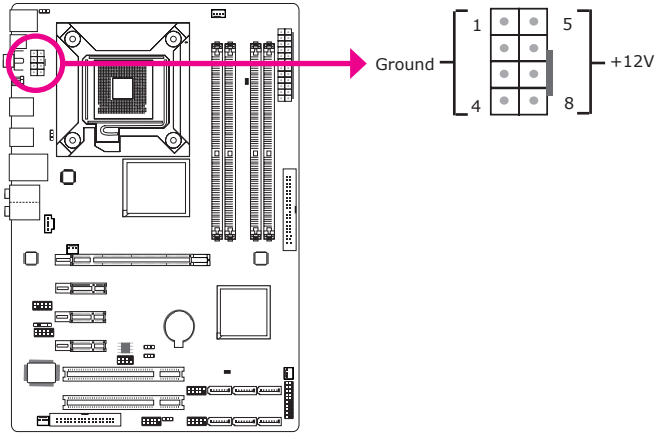
Important:
When the DRAM Power LED and/or Standby Power LED lit red, it indicates that power is present on the DIMM sockets and/or PCI slots. Power-off the PC then unplug the power cord prior to installing any memory modules or add-in cards. Failure to do so will cause severe damage to the motherboard and components.

Power Connectors

Use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply unit has a standard 24-pin ATX main power connector that must be inserted into this connector.



Your power supply unit may come with an 8-pin or 4-pin +12V power connector. The +12V power enables the delivery of more +12VDC current to the processor's Voltage Regulator Module (VRM). If available, it is preferable to use the 8-pin power; otherwise connect a 4-pin power to this connector.



The power connectors from the power supply unit are designed to fit the 24-pin and 8-pin connectors in only one orientation. Make sure to find the proper orientation before plugging the connectors.

The system board requires a minimum of 300 Watt power supply to operate. Your system configuration (CPU power, amount of memory, add-in cards, peripherals, etc.) may exceed the minimum power requirement. To ensure that adequate power is provided, we strongly recommend that you use a minimum of 400 Watt (or greater) power supply.

Important:
Insufficient power supplied to the system may result in instability or the add-in boards and peripherals not functioning properly. Calculating the system's approximate power usage is important to ensure that the power supply meets the system's consumption requirements.

Restarting the PC

Normally, you can power-off the PC by:

1. Pressing the power button at the front panel of the chassis.

   or

2. Pressing the power switch that is on the system board (note: not all system boards come with this switch).

If for some reasons you need to totally cut off the power supplied to the PC, switch off the power supply or unplug the power cord. Take note though that if you intend to restart it at once, please strictly follow the steps below.

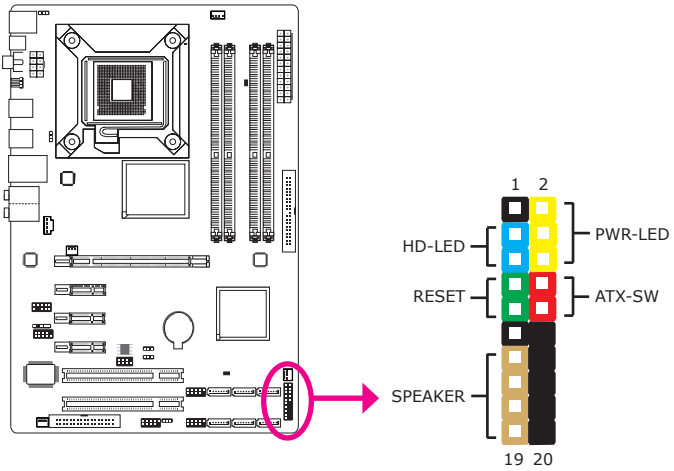
1. The time where power is totally discharged varies among power supplies. It's discharge time is highly dependent on the system's configuration such as the wattage of the power supply, the sequence of the supplied power as well as the number of peripheral devices connected to the system. Due to this reason, we strongly recommend that you wait for the Standby Power LED (refer to the "LEDs" section in this chapter for the location of the Standby Power LED) to lit off.

2. After the Standby Power LED has lit off, wait for 6 seconds before powering on the PC.

   If the system board is already enclosed in a chassis which apparently will not make the Standby Power LED visible, wait for 15 seconds before you restore power connections. 15 seconds is approximately the time that will take the LED to lit off and the time needed before restoring power.

The above will ensure protection and prevent damage to the motherboard and components.

Front Panel Connectors



HD-LED: Primary/Secondary IDE LED

This LED will light when the hard drive is being accessed.

RESET: Reset Switch

This switch allows you to reboot without having to power off the system thus prolonging the life of the power supply or system.

SPEAKER: Speaker Connector

This connects to the speaker installed in the system chassis.

ATX-SW: ATX Power Switch

Depending on the setting in the BIOS setup, this switch is a "dual function power button" that will allow your system to enter the Soft-Off or Suspend mode.

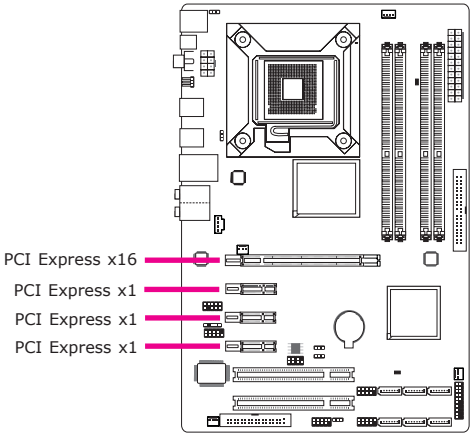
PWR-LED: Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) or S3 (STR - Suspend To RAM) state, it will blink every second.

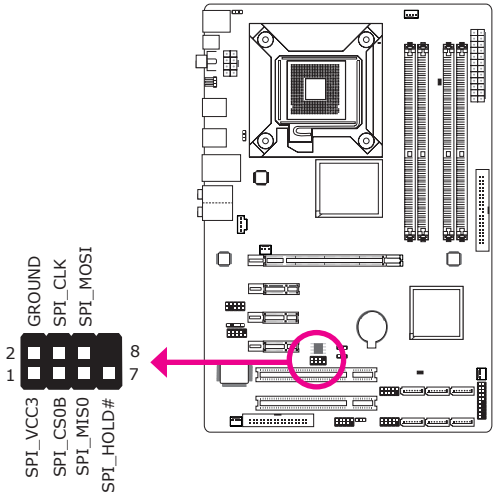
Note:
If a system did not boot-up and the Power/Standby LED did not light after it was powered-on, it may indicate that the CPU or memory module was not installed properly. Please make sure they are properly inserted into their corresponding socket.

	Pin	Pin Assignment
HD-LED (Primary/Secondary IDE LED)	3 5	HDD LED Power HDD
Reserved	14 16	N. C. N. C.
ATX-SW (ATX power switch)	8 10	PWRBT+ PWRBT-
Reserved	18 20	N. C. N. C.
RESET (Reset switch)	7 9	Ground H/W Reset
SPEAKER (Speaker connector)	13 15 17 19	Speaker Data N. C. Ground Speaker Power
PWR-LED (Power/Standby LED)	2 4 6	LED Power (+) LED Power (+) LED Power (-) or Standby Signal

PCI Express Slots



Download Flash BIOS Connector



Chapter 3 - BIOS Setup

Switchable Modes for Overclocking

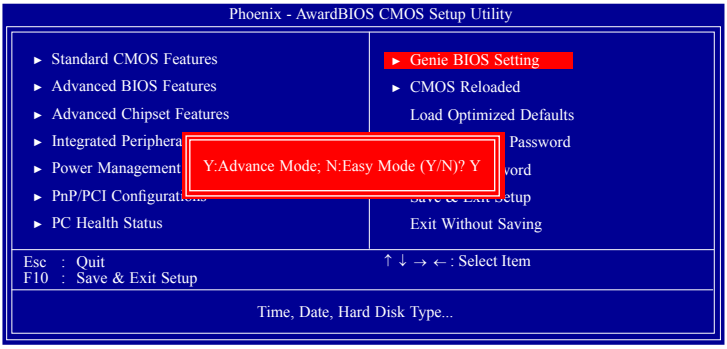
Aimed to provide convenience and superb overclockability, the Genie BIOS Setting submenu comes available in Easy mode (default mode) and Advance mode.

Easy Mode

Easy mode displays fields commonly used by users.

Advance Mode

If you intend to tweak your PC or boost its overclock feature, you can switch the Genie BIOS Setting submenu from Easy mode to Advance mode by simply pressing <F9> in the main menu of the Award BIOS utility then pressing <Y> to select Advance Mode. The Advance mode will display a wide range of fields useful in overclocking the board.



Award BIOS Setup Utility

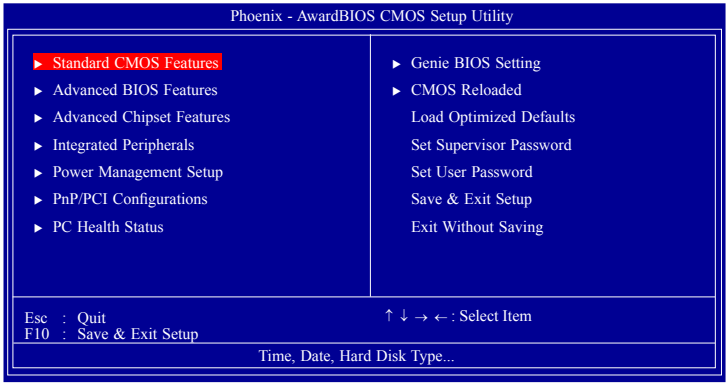
The Basic Input/Output System (BIOS) is a program that takes care of the basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features found in this system board. This chapter explains the Setup Utility for the Award BIOS.

After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the following message will appear on the screen:

Press DEL to enter setup

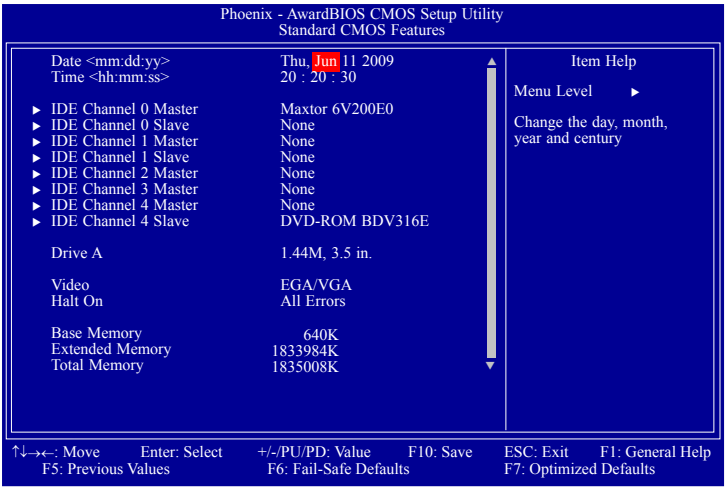
If the message disappears before you respond, restart the system or press the "Reset" button. You may also restart the system by pressing the <Ctrl> <Alt> and <Del> keys simultaneously.

When you press <Del>, the main menu screen will appear.



Standard CMOS Features

Use the arrow keys to highlight "Standard CMOS Features" then press <Enter>. A screen similar to the one below will appear.


Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features
Date <mm:dd:yy> Thu, Jun 11 2009
Time <hh:mm:ss> 20 : 20 : 30
IDE Channel 0 Master Maxtor 6V200E0
IDE Channel 0 Slave None
IDE Channel 1 Master None
IDE Channel 1 Slave None
IDE Channel 2 Master None
IDE Channel 3 Master None
IDE Channel 4 Master None
IDE Channel 4 Slave DVD-ROM BDV316E
Drive A 1.44M, 3.5 in.
Video EGA/VGA
Halt On All Errors
Base Memory 640K
Extended Memory 1833984K
Total Memory 1835008K
Item Help
Menu Level ▸
Change the day, month, year and century
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The screen above list all the fields available in the Standard CMOS Features submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

Date

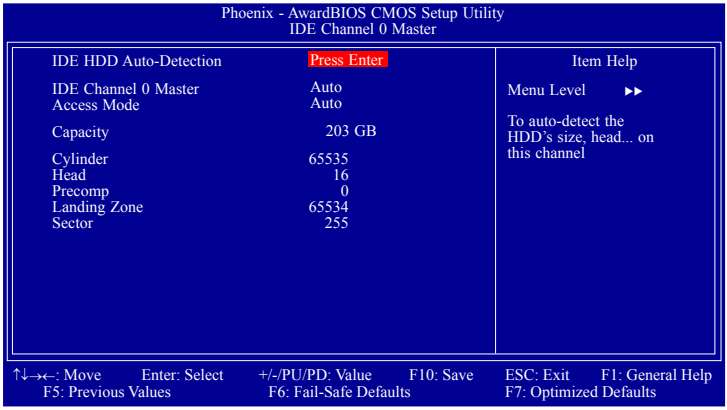
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1994 to 2079.

Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

IDE Channel 0 Master to IDE Channel 4 Slave

These fields are used to configure Parallel ATA drives. Move the cursor to a field then press <Enter>. The following screen will appear.



The settings on the screen are for reference only. Your version may not be identical to this one.

IDE HDD Auto-Detection

Detects the parameters of the drive. The parameters will automatically be shown on the screen.

IDE Channel 0 Master to IDE Channel 4 Slave

If you select ”Auto”, the BIOS will auto-detect the HDD & CD-ROM drive at the POST stage and show the IDE for the HDD & CD-ROM drive. If a hard disk has not been installed, select “None”.

Access Mode

For hard drives larger than 528MB, you would typically select the LBA type. Certain operating systems require that you select CHS or Large. Please check your operating system’s manual or Help desk on which one to select.

Capacity

Displays the approximate capacity of the disk drive. Usually the size is slightly greater than the size of a formatted disk given by a disk checking program.

Cylinder

This field displays the number of cylinders.

Head

This field displays the number of read/write heads.

Precomp

This field displays the number of cylinders at which to change the write timing.

Landing Zone

This field displays the number of cylinders specified as the landing zone for the read/write heads.

Sector

This field displays the number sectors per track.

Drive A

This field identifies the type of floppy disk drive installed.

None
No floppy drive is installed

360K, 5.25 in.
5-1/4 in. standard drive; 360KB capacity

1.2M, 5.25 in.
5-1/4 in. AT-type high-density drive; 1.2MB capacity

720K, 3.5 in.
3-1/2 in. double-sided drive; 720KB capacity

1.44M, 3.5 in.
3-1/2 in. double-sided drive; 1.44MB capacity

2.88M, 3.5 in.
3-1/2 in. double-sided drive; 2.88MB capacity

Video

This field selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type. The default setting is EGA/VGA.

EGA/VGA
Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA and PGA monitor adapters.

CGA 40
Color Graphics Adapter. Power up in 40-column mode.

CGA 80
Color Graphics Adapter. Power up in 80-column mode.

Mono
Monochrome adapter. Includes high resolution monochrome adapters.

Halt On

This field determines whether the system will stop if an error is detected during power up. The default setting is All Errors.

No Errors
The system boot will not stop for any errors detected.

All Errors
The system boot will stop whenever the BIOS detects a non-fatal error.

All, But Keyboard
The system boot will not stop for a keyboard error; it will stop for all other errors.

All, But Diskette
The system boot will not stop for a disk error; it will stop for all other errors.

All, But Disk/Key
The system boot will not stop for a disk or keyboard error; it will stop for all other errors.

Base Memory

Displays the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard or 640K for systems with 640K or more memory installed on the motherboard.

Extended Memory

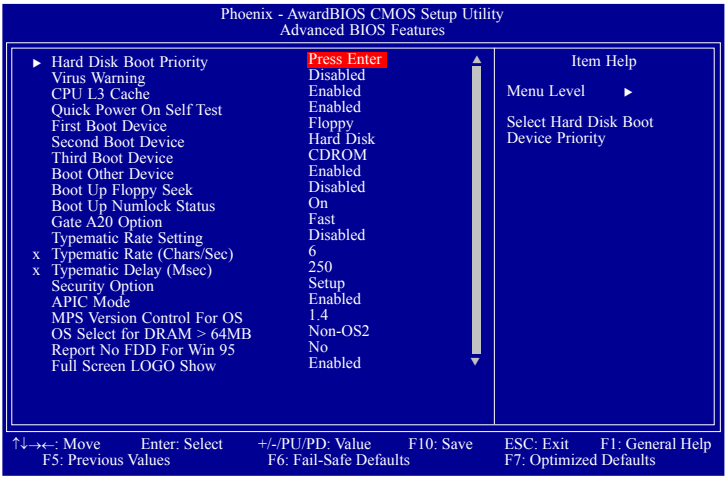
Displays the amount of extended memory detected during boot-up.

Total Memory

Displays the total memory available in the system.

Advanced BIOS Features

The Advanced BIOS Features allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.



The screen above list all the fields available in the Advanced BIOS Features submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

Hard Disk Boot Priority

Refer to the next section for more information on this submenu.

Virus Warning

This field protects the boot sector and partition table of your hard disk drive. When this field is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive. If an attempt is made to write to the boot sector or partition table of the hard disk drive, the BIOS will halt the system and an error message will appear.

After seeing the error message, if necessary, you will be able to run an anti-virus program to locate and remove the problem before any damage is done.

Many disk diagnostic programs which attempt to access the boot sector table will cause the warning message to appear. If you are running such a program, we recommend that you first disable this field.

CPU L3 Cache

This field is used to enable or disable the CPU's L3 cache.

Quick Power On Self Test

This field speeds up Power On Self Test (POST) whenever the system is powered on. The BIOS will shorten or skip some check items during POST. To attain the shortest POST time, select "Fast".

First Boot Device, Second Boot Device, Third Boot Device and Boot Other Device

Select the drive to boot first, second and third in the "First Boot Device" "Second Boot Device" and "Third Boot Device" fields respectively. The BIOS will boot the operating system according to the sequence of the drive selected. Set "Boot Other Device" to Enabled if you wish to boot from another device.

Boot Up Floppy Seek

When enabled, the BIOS will check whether the floppy disk drive installed is 40 or 80 tracks. Note that the BIOS cannot distinguish between 720K, 1.2M, 1.44M and 2.88M drive types as they are all 80 tracks. When disabled, the BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360KB.

Boot Up NumLock Status

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

Gate A20 Option

This field allows you to select how gate A20 is handled. Gate A20 is a device used to address memory above 1 Mbyte. Initially, gate A20 was handled via the keyboard controller. Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset to provide support for gate A20. A20 refers to the first 64KB of extended memory.

Fast
The chipset controls Gate A20.

Normal
A pin in the keyboard controller controls Gate A20.

Typematic Rate Setting

Disabled
Continually holding down a key on your keyboard will cause the BIOS to report that the key is down.

Enabled
The BIOS will not only report that the key is down, but will first wait for a moment, and, if the key is still down, it will begin to report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys. You can then select the typematic rate and typematic delay in the "Typematic Rate (Chars/Sec)" and "Typematic Delay (Msec)" fields below.

Typematic Rate (Chars/Sec)

This field allows you to select the rate at which the keys are accelerated.

Typematic Delay (Msec)

This field allows you to select the delay between when the key was first depressed and when the acceleration begins.

Security Option

This field determines when the system will prompt for the password- everytime the system boots or only when you enter the BIOS setup. Set the password in the Set Supervisor/User Password submenu.

System
The system will not boot and access to Setup will be denied unless the correct password is entered at the prompt.

Setup
The system will boot, but access to Setup will be denied unless the correct password is entered at the prompt.

APIC Mode

Leave this field in its default setting.

MPS Version Co•ntrol for OS

This field is used to select the MPS version that the system board is using.

OS Select for DRAM > 64MB

Select the "OS2" option only if the system that is running an OS/2 operating system has greater than 64MB RAM.

Report No FDD For Win95

Yes
Will report no FDD for Windows® 95.

No
Will not report no FDD for Windows® 95.

Full Screen LOGO Show

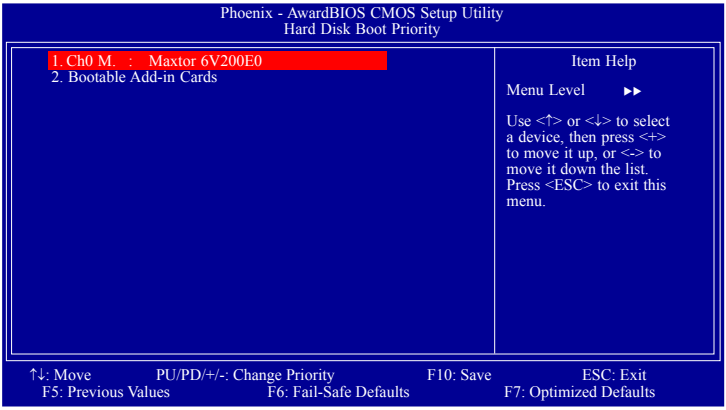
This field is applicable only if you want a particular logo to appear during system boot-up.

Enabled
The logo will appear in full screen during system boot-up.

Disabled
The logo will not appear during system boot-up.

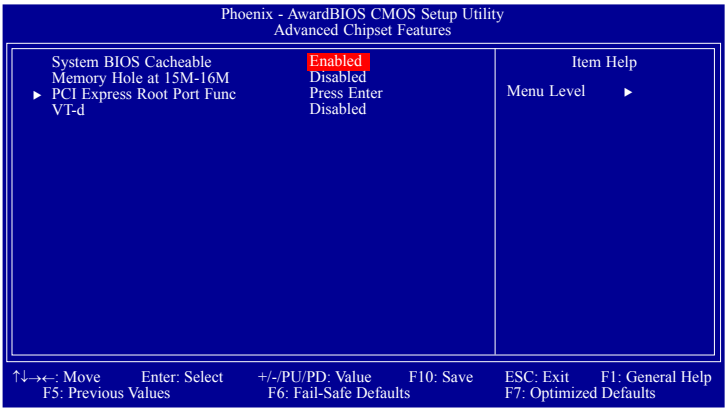
Hard Disk Boot Priority

This field is used to select the boot sequence of the hard drives. Move the cursor to this field then press <Enter>. Use the Up or Down arrow keys to select a device then press <+> to move it up or <-> to move it down the list.


Phoenix - AwardBIOS CMOS Setup Utility
Hard Disk Boot Priority
1. Ch0 M. : Maxtor 6V200E0
2. Bootable Add-in Cards
Item Help
Menu Level ▸▸
Use <↑> or <↓> to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.
↑↓: Move
PU/PD/+/-: Change Priority
F10: Save
ESC: Exit
F5: Previous Values
F6: Fail-Safe Defaults
F7: Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

Advanced Chipset Features



The settings on the screen are for reference only. Your version may not be identical to this one.

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources. These items should not be altered unless necessary. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered some incompatibility or that data was being lost while using your system.

System BIOS Cacheable

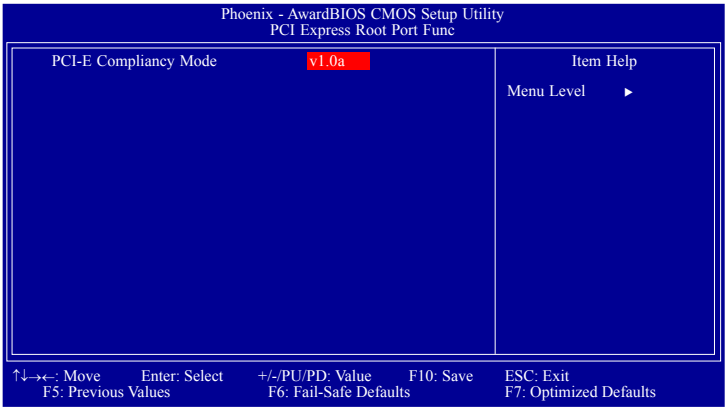
When this field is enabled, accesses to the system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled. The larger the range of the Cache RAM, the higher the efficiency of the system.

Memory Hole At 15M-16M

In order to improve system performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16MB. When enabled, the CPU assumes the 15-16MB memory range is allocated to the hidden ISA address range instead of the actual system DRAM. When disabled, the CPU assumes the 15-16MB address range actually contains DRAM memory. If more than 16MB of system memory is installed, this field must be disabled to provide contiguous system memory.

PCI Express Root Port Func

Move the cursor to this field and press <Enter>. The following screen will appear.



The settings on the screen are for reference only. Your version may not be identical to this one.

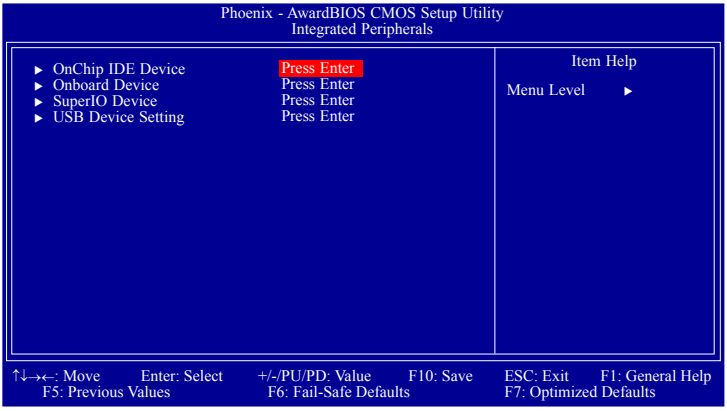
PCI-E Compliancy Mode

This field is used to select the mode for the PCI Express add-in card.

VT-d

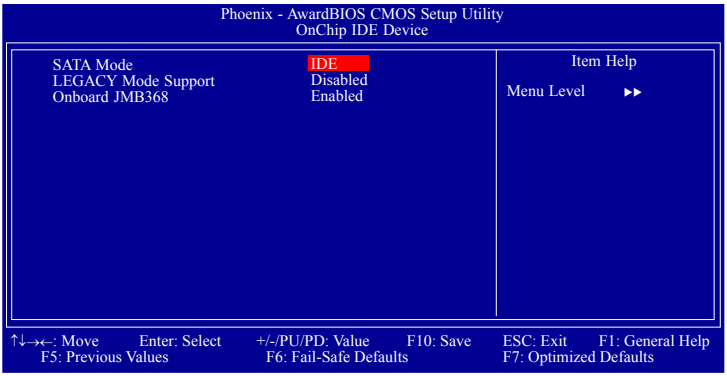
The optioins are Enabled and Disabled.

Integrated Peripherals



The settings on the screen are for reference only. Your version may not be identical to this one.

OnChip IDE Device



The settings on the screen are for reference only. Your version may not be identical to this one.

SATA Mode

This field is used to configure the SATA devices supported by the south-bridge.

IDE
This option configures the Serial ATA drives as Parallel ATA storage devices.

RAID
This option allows you to create RAID or Intel Matrix Storage configuration on Serial ATA devices.

AHCI
This option allows the Serial ATA devices to use AHCI (Advanced Host Controller Interface).

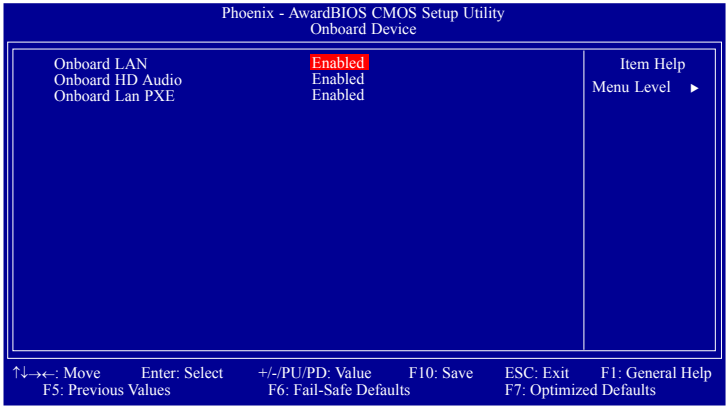
Legacy Mode Support

Some operating systems are not supported in Native mode. If you are using this kind of operating system, set this field to Enabled.

Onboard JMB368

This field is used to enable or disable the JMB368 controller.

Onboard Device



The settings on the screen are for reference only. Your version may not be identical to this one.

Onboard LAN

These field is used to enable or disable the onboard LAN controller.

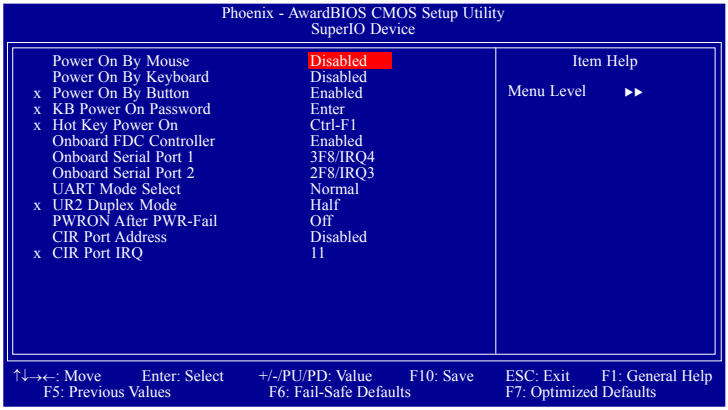
Onboard HD Audio

This field is used to enable or disable the onboard HD audio.

Onboard Lan PXE

These field is used to enable or disable the onboard LAN PXE.

Super IO Device


Phoenix - AwardBIOS CMOS Setup Utility
SuperIO Device
Power On By Mouse Disabled
Power On By Keyboard Disabled
x Power On By Button Enabled
x KB Power On Password Enter
x Hot Key Power On Ctrl-F1
Onboard FDC Controller Enabled
Onboard Serial Port 1 3F8/IRQ4
Onboard Serial Port 2 2F8/IRQ3
UART Mode Select Normal
x UR2 Duplex Mode Half
PWRON After PWR-Fail Off
CIR Port Address Disabled
x CIR Port IRQ 11
Item Help
Menu Level ▸▸
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

Power On By Mouse

Enabled
Enables the mouse power-on function.

Disabled
Disables the mouse power-on function.

Power On By Keyboard

This field allows you to use the keyboard to power-on the system.

Disabled
Disables the keyboard power-on function.

Password
When this option is selected, set the password you would like to use to power-on the system in the "KB Power On Password" field.

Hot Key
When this option is selected, select the function key you would like to use to power-on the system in the "Hot Key Power On" field.

Any Key
Press any key to power-on the system.

Keyboard 98
When this option is selected, press the "wake up" key of the Windows 98 compatible keyboard to power-on the system.

Power On By Button

To use the power button to power on the system, set this field to Enabled.

KB Power On Password

Move the cursor to this field and press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, then press <Enter>.

The power button will not function once a keyboard password has been set in this field. You must type the correct password to power-on the system. If you forgot the password, power-off the system and remove the battery. Wait for a few seconds and install it back before powering-on the system.

Hot Key Power On

This field is used to select a function key that you would like to use to power-on the system.

Onboard FDC Controller

Enabled
Enables the onboard floppy disk controller.

Disabled
Disables the onboard floppy disk controller.

Onboard Serial Port 1 and Onboard Serial Port 2

Auto
The system will automatically select an I/O address for the onboard serial port 1 and serial port 2.

3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3
Allows you to manually select an I/O address for the onboard serial port 1 and serial port 2.

Disabled
Disables the onboard serial port 1 and/or serial port 2.

UART Mode Select

This field is used to select the type of IrDA standard supported by your IrDA device. For better transmission of data, your IrDA peripheral device must be within a 30° angle and within a distance of 1 meter.

UR2 Duplex Mode

Half
Data is completely transmitted before receiving data.

Full
Transmits and receives data simultaneously.

PWRON After PWR-Fail

Off
When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

On
When power returns after an AC power failure, the system will automatically power-on.

Former-Sts
When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

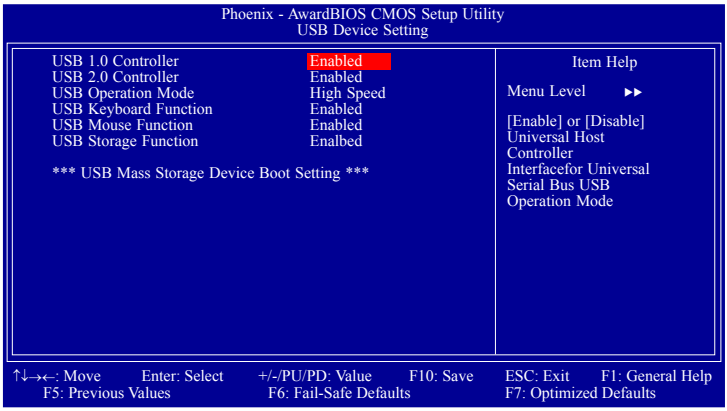
CIR Port Address

This field is used to select an I/O address for the CIR device.

CIR Port IRQ

This field is used to select an IRQ for the CIR device.

USB Device Setting



The settings on the screen are for reference only. Your version may not be identical to this one.

USB 1.0 Controller

This field is used to enable or disable the Universal Host Controller Interface (USB 1.0).

USB 2.0 Controller

This field is used to enable or disable the Enhanced Host Controller Interface (USB 2.0).

USB Operation Mode

High Speed
If the USB device is a high speed device, it will operate in high speed mode. If it is a full/low speed device, it will operate in full/low speed mode.

Full/Low Speed
Regardless of the speed of the USB device, it will always operate in full/low speed mode.

USB Keyboard Function

Due to the limited space of the BIOS ROM, the support for legacy USB keyboard (in DOS mode) is by default set to Disabled. With more BIOS ROM space available, it will be able to support more advanced features as well as provide compatibility to a wide variety of peripheral devices.

If a PS/2 keyboard is not available and you need to use a USB keyboard to install Windows (installation is performed in DOS mode) or run any program under DOS, set this field to Enabled.

USB Mouse Function

Due to the limited space of the BIOS ROM, the support for legacy USB mouse (in DOS mode) is by default set to Disabled. With more BIOS ROM space available, it will be able to support more advanced features as well as provide compatibility to a wide variety of peripheral devices.

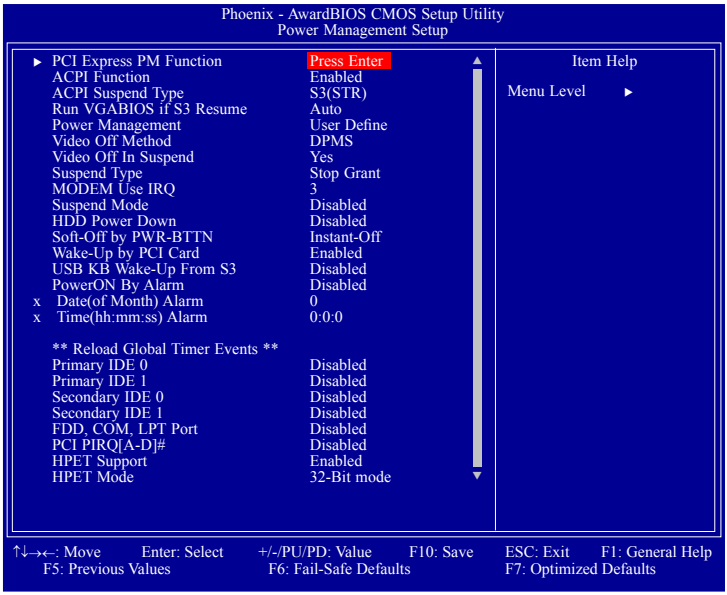
If a PS/2 mouse is not available and you need to use a USB mouse to install Windows (installation is performed in DOS mode) or run any program under DOS, set this field to Enabled.

USB Storage Function

This field is used to enable or disable the support for legacy USB mass storage.

Power Management Setup

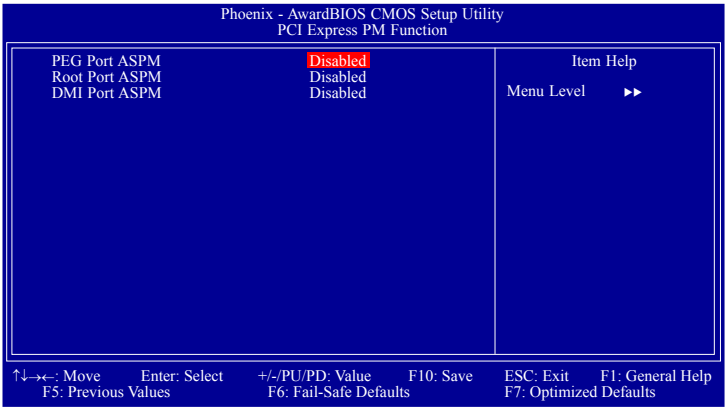
The Power Management Setup allows you to configure your system to most effectively save energy.



The screen above list all the fields available in the Power Management Setup submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

PCI Express PM Function

This field is used to configure the PCI Express PM function.



The settings on the screen are for reference only. Your version may not be identical to this one.

PEG Port ASPM

The options are Disabled, L0s and L1/L0s.

Root Port ASPM

The options are Disabled, L0s, L1 and L1/L0s.

DMI Port ASPM

The options are Enabled and Disabled.

ACPI Function

By default, the ACPI function is enabled. This function should be enabled only in operating systems that support ACPI.

ACPI Suspend Type

This field is used to select the type of Suspend mode.

S1(POS)
Enables the Power On Suspend function.

S3(STR)
Enables the Suspend to RAM function.

Run VGABIOS if S3 Resume

When this field is set to Auto, the system will initialize the VGA BIOS when it wakes up from the S3 state. This can be configured only if the "ACPI Suspend Type" field is set to "S3(STR)". When this feature is disabled, the system resume time is shortened but system will need an AGP driver to initialize the VGA card. Therefore, if the AGP driver of the card does not support the initialization feature, the display may work abnormally or not function after resuming from S3.

Power Management

This field allows you to select the type (or degree) of power saving by changing the length of idle time that elapses before the HDD Power Down field is activated.

Min Saving
Minimum power saving time for the HDD Power Down = 15 min.

Max Saving
Maximum power saving time for the HDD Power Down = 1 min.

User Define
Allows you to set the power saving time in the "HDD Power Down" field.

Disabled
Disables the Power Management function.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC + Blank
This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen
This option only writes blanks to the video buffer.

DPMS Support
Initializes display power management signaling. Use this option if your video board supports it.

Video Off In Suspend

This field is used to activate the video off feature when the system enters the Suspend mode. The options are Yes and No.

Suspend Type

The options are Stop Grant and PwrOn Suspend.

MODEM Use IRQ

This field is used to set an IRQ channel for the modem installed in your system.

Suspend Mode

This is configurable only when the Power Management field is set to "User Define". When the system enters the power saving time set in this field, the CPU and onboard peripherals will be shut off.

HDD Power Down

This is configurable only when the Power Management field is set to User Define. When the system enters the power saving time set in this field, the hard disk drive will be powered down while all other devices remain active.

Soft-Off by PWR-BTTN

This field allows you to select the method of powering off your system.

Delay 4 Sec.
Regardless of whether the Power Management function is enabled or disabled, if the power button is pushed and released in less than 4 sec, the system enters the Suspend mode. The purpose of this function is to prevent the system from powering off in case you accidentally "hit" or pushed the power button. Push and release again in less than 4 sec to restore. Pushing the power button for more than 4 seconds will power off the system.

Instant-Off
Pressing and then releasing the power button at once will immediately power off your system.

Wake-Up by PCI Card

Enabled
This field should be set to Enabled only if your PCI card such as LAN card or modem card uses the PCI PME (Power Management Event) signal to remotely wake up the system. Access to the LAN card or PCI card will cause the system to wake up. Refer to the card's documentation for more information.

Disabled
The system will not wake up despite access to the PCI card.

USB KB Wake-Up From S3

This field, when enabled, allows you to use a USB keyboard to wake up a system that is in the S3 (STR - Suspend To RAM) state. This can be configured only if the "ACPI Suspend Type" field is set to "S3(STR)".

PowerOn By Alarm

Enabled
When Enabled, you can set the time you would like the Soft Power Down (Soft-Off) PC to power-on in the "Time (dd:hh:mm) of Alarm" field. However, if the system is being accessed by incoming calls or the network prior to the time set in the field, the system will give priority to the incoming calls or network.

Disabled
Disables the automatic power-on function. (default).

Date (of Month) Alarm

0
The system will power-on everyday according to the time set in the "Time (hh:mm:ss) Alarm" field.

1-31
Select a date you would like the system to power-on. The system will power-on on the set date, and time set in the "Time (hh:mm:ss) Alarm" field.

Time (hh:mm:ss) of Alarm

This is used to set the time you would like the system to power-on.

Reload Global Timer Events

When enabled, access to the specified field (Primary IDE 0/1, Secondary IDE 0/1, FDD/COM/LPT Port and PCI PIRQ[A-D]#) will cause the system to wake up completely from the power management mode. When disabled, the system will not wake up from the power management mode despite access to the specified field.

HPET Support

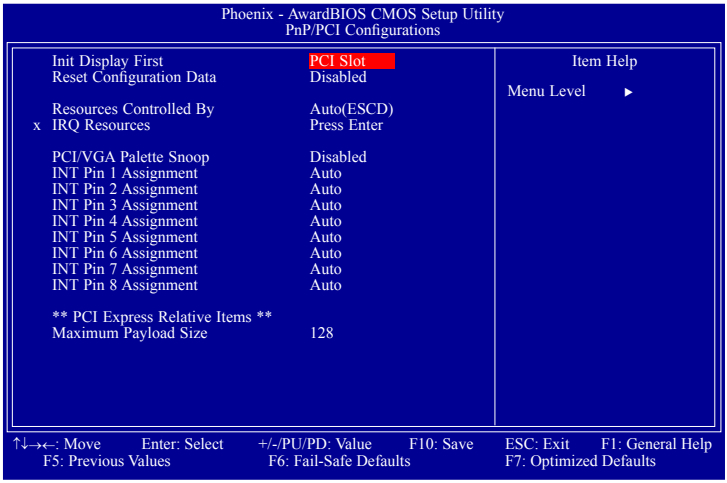
This field is used to enable or disable HPET.

HPET Mode

The options are 32-bit mode and 64-bit mode.

PnP/PCI Configurations

This section describes configuring the PCI bus system. It covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.



The settings on the screen are for reference only. Your version may not be identical to this one.

Init Display First

PCIEx
When the system boots, it will first initialize the PCI Express x16 graphics card.

PCI Slot
When the system boots, it will first initialize PCI.

Reset Configuration Data

Enabled
The BIOS will automatically reset the Extended System Configuration Data (ESCD) once. It will then recreate a new set of configuration data.

Disabled
he BIOS will not reset the configuration data.

Resources Controlled By

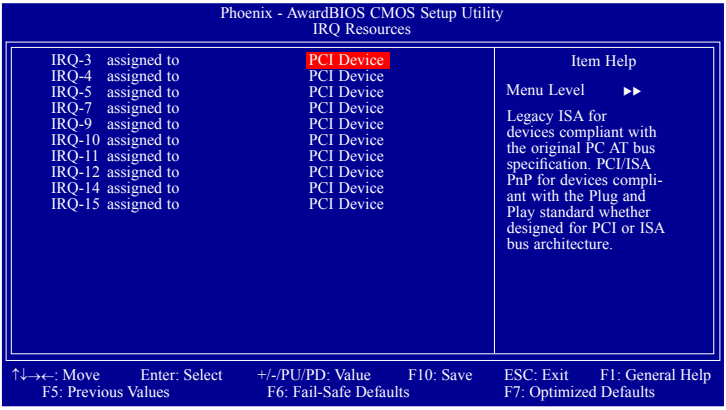
The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices.

Auto(ESCD)
The system will automatically detect the settings for you.

Manual
Choose the specific IRQ in the "IRQ Resources" field.

IRQ Resources

Move the cursor to this field and press <Enter>. This field is used to set each system interrupt to either Reserved or PCI Device.


Phoenix - AwardBIOS CMOS Setup Utility
IRQ Resources
IRQ-3 assigned to PCI Device
IRQ-4 assigned to PCI Device
IRQ-5 assigned to PCI Device
IRQ-7 assigned to PCI Device
IRQ-9 assigned to PCI Device
IRQ-10 assigned to PCI Device
IRQ-11 assigned to PCI Device
IRQ-12 assigned to PCI Device
IRQ-14 assigned to PCI Device
IRQ-15 assigned to PCI Device
Item Help
Menu Level ▸▸
Legacy ISA for devices compliant with the original PC AT bus specification. PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

PCI/VGA Palette Snoop

This field determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not. The default value is Disabled.

Enabled
MPEG ISA/VESA VGA cards work with PCI/VGA.

Disabled
MPEG ISA/VESA VGA cards does not work with PCI/VGA.

PCI Latency Timer (Per 8CLK)

This feature is used to select the length of time each PCI device will control the bus before another takes over. The larger the value, the longer the PCI device can retain control of the bus. Since each access to the bus comes with an initial delay before any transaction can be made, low values for the PCI Latency Timer will reduce the effectiveness of the PCI bandwidth while higher values will improve it.

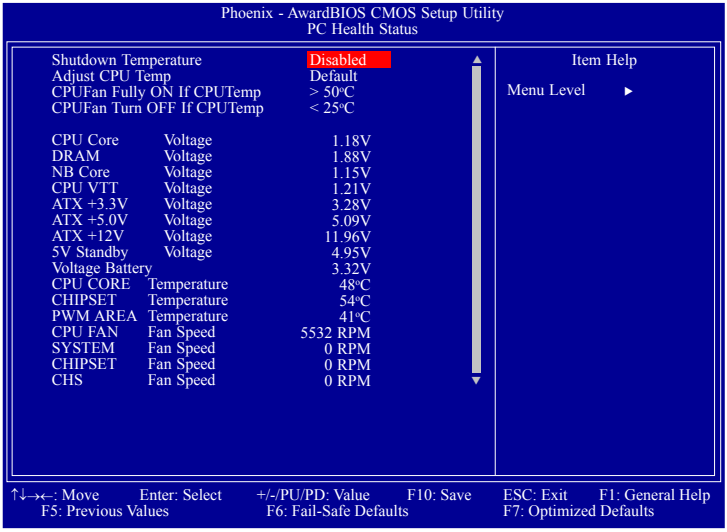
INT Pin 1 Assignment to INT Pin 8 Assignment

By default, a device is automatically assigned to each INT. You can also manually assign an INT for each device.

Maximum Payload Size

This field is used to select the maximum TLP payload size of the PCI Express devices. The unit is byte.

PC Health Status


Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status
Shutdown Temperature Disabled
Adjust CPU Temp Default
CPUFan Fully ON If CPUTemp > 50°C
CPUFan Turn OFF If CPUTemp < 25°C
CPU Core Voltage 1.18V
DRAM Voltage 1.88V
NB Core Voltage 1.15V
CPU VTT Voltage 1.21V
ATX +3.3V Voltage 3.28V
ATX +5.0V Voltage 5.09V
ATX +12V Voltage 11.96V
5V Standby Voltage 4.95V
Voltage Battery 3.32V
CPU CORE Temperature 48°C
CHIPSET Temperature 54°C
PWM AREA Temperature 41°C
CPU FAN Fan Speed 5532 RPM
SYSTEM Fan Speed 0 RPM
CHIPSET Fan Speed 0 RPM
CHS Fan Speed 0 RPM
Item Help
Menu Level ▸
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The screen above list all the fields available in the PC Health Status submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

Shutdown Temperature

You can prevent the system from overheating by selecting a temperature at which the system will shutdown. If the system detected that its temperature exceeded the one set in this field, it will automatically shutdown.

Adjust CPU Temp

This field is used to adjust the CPU's temperature.

CPUFan Fully On If CPUTemp

This field is used to select the CPU's temperature at which the CPU fan will rotate at full speed.

CPUFan Turn Off If CPUTemp

This field is used to select the CPU's temperature at which the CPU fan will rotate at a start speed which is the slowest speed.

Note:

1. If the CPU temperature runs between the highest (set in the "CPUFan Fully On If CPUTemp" field) and lowest (set in the "CPUFan Turn Off If CPUTemp" field) temperature, the system will automatically adjust the CPU fan's speed according to the temperature.
2. If you want to reduce the CPU fan's noise or prevent CPU overheat, select a lower temperature in the "CPUFan Fully On If CPUTemp" field to allow the CPU fan to rotate full speed at the selected lower temperature.

CPU Core Voltage to CHS Fan Speed

These fields will show the output voltage, temperature and fan speed of the monitored devices or components.

Genie BIOS Setting

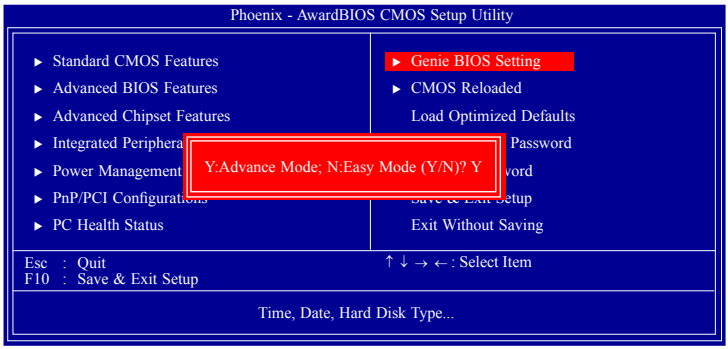
Aimed to provide convenience and superb overclockability, this submenu comes available in Easy mode (default mode) and Advance mode.

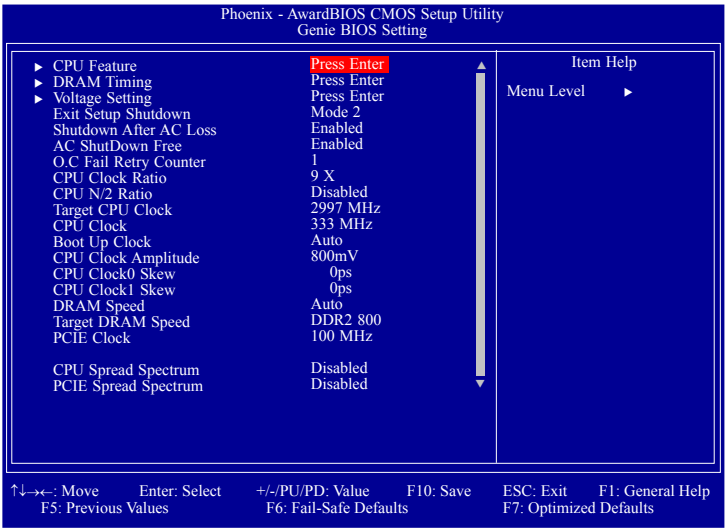
Easy Mode

Easy mode displays fields commonly used by users.

Advance Mode

If you intend to tweak your PC or boost its overclock features, you can switch the Genie BIOS Setting submenu from Easy mode to Advance mode by simply pressing <F9> in the main menu of the Award BIOS utility then pressing <Y> to select Advance Mode. The Advance mode will display a wide range of fields useful in overclocking the board.





The screen above list all the fields available in the Genie BIOS Setting submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

CPU Feature

DRAM Timing

Voltage Setting

Refer to the following pages for more information on these submenus.

Exit Setup Shutdown

The options are Mode 1 and Mode 2.

Shutdown After AC Loss

The options are Enabled and Disabled.

AC Shutdown Free

The options are Enabled and Disabled.

O.C. Fail Retry Counter

The options are 0, 1, 2 and 3.

CPU Clock Ratio

This field is used to select the CPU's frequency ratio.

CPU N/2 Ratio

The options are Enabled and Disabled.

Target CPU Clock

This field will show the targeted CPU clock.

CPU Clock

This field provides several options for selecting the external system bus clock of the processor. The available options allow you to adjust the processor's bus clock by 1MHz increment.

Important:
Selecting an external bus clock other than the default setting may result to the processor's or system's instability and are not guaranteed to provide better system performance.

Boot Up Clock

This field is used to select the boot up clock.

CPU Clock Amplitude

The options are 700mV, 800mV, 900mV and 1000mV.

CPU Clock0 Skew and CPU Clock1 Skew

Thse fields are used to select a skew control value of the CPU clock.

DRAM Speed

This field is used to select the clock speed of the DIMM.

Target DRAM Speed

This field will show the targeted DRAM speed.

PCIE Clock

This field is used to select the bus clock of the PCI Express.

CPU Spread Spectrum

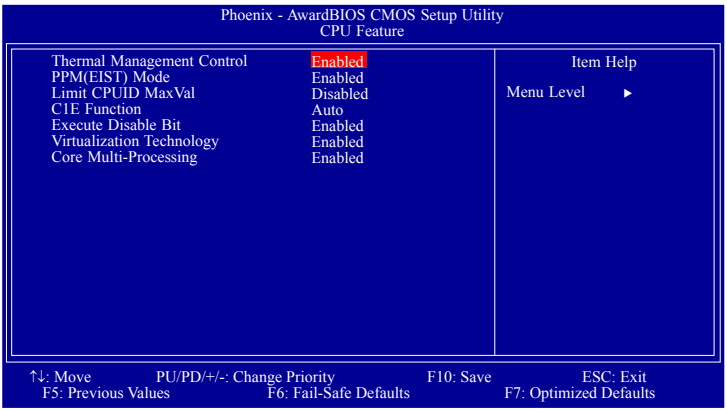
The options are Disabled, -0.5%, +-0.25%, -1.0% and +-0.5%.

PCIE Spread Spectrum

The options are Disabled, -0.5%, and -1.0%.

CPU Feature

Move the cursor to this field and press <Enter>, the following screen will appear:



The settings on the screen are for reference only. Your version may not be identical to this one.

Thermal Management Control

This field is used to enable or disable thermal management.

PPM (EIST) Mode

The options are Enabled and Disabled.

Limit CPUID MaxVal

The CPUID instruction of some newer CPUs will return a value greater than 3. Problems will occur only in certain operating systems. The default is Disabled because this problem does not exist in the Windows series operating systems. If you are using an operating system other than Windows, this problem may occur. To avoid tihs problem, enable this field to limit the return value to 3 or lesser than 3.

C1E Function

The options are Auto and Disabled.

Execute Disable Bit

When this field is set to Disabled, it will force the XD feature flag to always return to 0.

Virtualization Technology

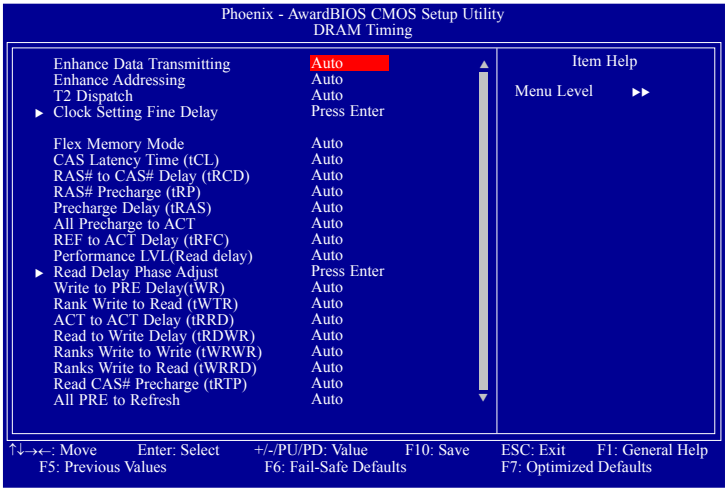
When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Core Multi-Processing

The options are Enabled and Disabled.

DRAM Timing

Move the cursor to this field and press <Enter>. The following screen will appear.


Phoenix - AwardBIOS CMOS Setup Utility
DRAM Timing
Enhance Data Transmitting Auto
Enhance Addressing Auto
T2 Dispatch Auto
Clock Setting Fine Delay Press Enter
Flex Memory Mode Auto
CAS Latency Time (tCL) Auto
RAS# to CAS# Delay (tRCD) Auto
RAS# Precharge (tRP) Auto
Precharge Delay (tRAS) Auto
All Precharge to ACT Auto
REF to ACT Delay (tRFC) Auto
Performance LVL(Read delay) Auto
Read Delay Phase Adjust Press Enter
Write to PRE Delay(tWR) Auto
Rank Write to Read (tWTR) Auto
ACT to ACT Delay (tRRD) Auto
Read to Write Delay (tRDWR) Auto
Ranks Write to Write (tWRWR) Auto
Ranks Write to Read (tWRRD) Auto
Read CAS# Precharge (tRTP) Auto
All PRE to Refresh Auto
Item Help
Menu Level ▸▸
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The screen above list all the fields available in the DRAM Timing submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

Enhance Data Transmitting

The options are Auto, Normal, Fast and Turbo.

Enhance Addressing

The options are Auto, Normal and Fast.

T2 Dispatch

The options are Auto, Enabled and Disabled.

Clock Setting Fine Delay

Refer to the following pages for more information on this submenu.

Flex Memory Mode

This field is used to configure the flex memory mode. The options are Auto and Disabled.

CAS Latency Time (tCL)

This field is used to select the clock cycle of the CAS latency time. The option selected specifies the timing delay before SDRAM starts a read command after receiving it.

RAS# to CAS# Delay (tRCD)

This field is used to select the RAS# to CAS# delay time when reading and writing to the same bank.

RAS# Precharge (tRP)

This field is used to select the idle clocks after issuing a precharge command to the DRAM.

Precharge Delay (tRAS)

The options are Auto, and 9 to15.

ALL Precharge to Act

The options are Auto, and 2 to 9.

REF to ACT Delay (tRFC)

The options are Auto, and 16 to 33.

Performance LVL (Read Delay)

The options are Auto, and 1 to 15.

Read Delay Phase Adjust

Refer to the following pages for more information on this submenu.

Write to PRE Delay (tWR)

The options are Auto, and 6 to 18.

Rank Write to Read (tWTR)

The options are Auto, and 6 to 18.

ACT to ACT Delay (tRRD)

The options are Auto, and 1 to 15.

Read to Write Delay (tRDWR)

This field is used to select the read to write delay time. Although this is not a DRAM specified timing parameter, it is related to the routing latencies on the clock forwarded bus. This is measured from the first address bus slot which is not associated with part of the read burst.

Ranks Write to Write (tWRWR)

The options are 0 to 15.

Ranks Write to Read (tWRRD)

The options are 0 to 15.

Read CAS# Precharge (tRTP)

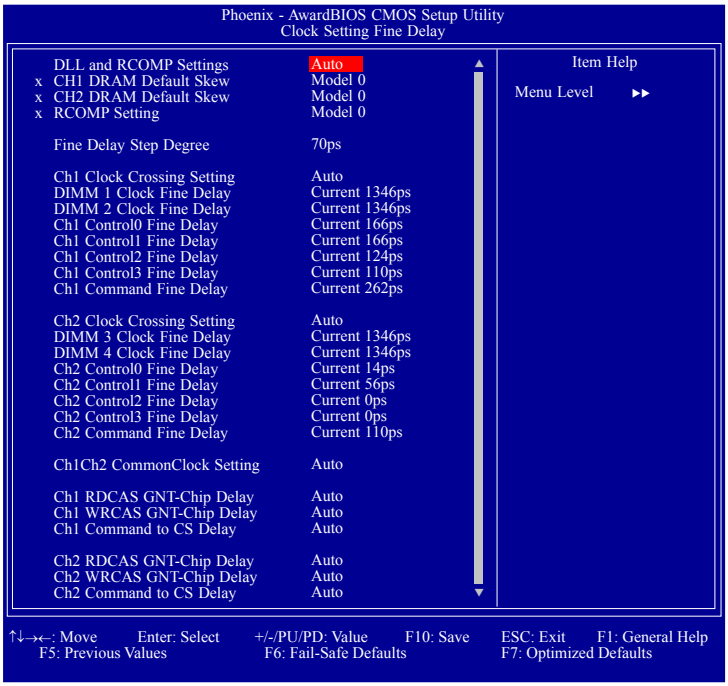
The options are Auto, and 1 to 15.

ALL PRE to Refresh

The options are Auto, and 1 to 7.

Clock Setting Fine Delay

Move the cursor to this field and press <Enter>. The following screen will appear.


Phoenix - AwardBIOS CMOS Setup Utility
Clock Setting Fine Delay
DLL and RCOMP Settings Auto
x CH1 DRAM Default Skew Model 0
x CH2 DRAM Default Skew Model 0
x RCOMP Setting Model 0
Fine Delay Step Degree 70ps
Ch1 Clock Crossing Setting Auto
DIMM 1 Clock Fine Delay Current 1346ps
DIMM 2 Clock Fine Delay Current 1346ps
Ch1 Control0 Fine Delay Current 166ps
Ch1 Control1 Fine Delay Current 166ps
Ch1 Control2 Fine Delay Current 124ps
Ch1 Control3 Fine Delay Current 110ps
Ch1 Command Fine Delay Current 262ps
Ch2 Clock Crossing Setting Auto
DIMM 3 Clock Fine Delay Current 1346ps
DIMM 4 Clock Fine Delay Current 1346ps
Ch2 Control0 Fine Delay Current 14ps
Ch2 Control1 Fine Delay Current 56ps
Ch2 Control2 Fine Delay Current 0ps
Ch2 Control3 Fine Delay Current 0ps
Ch2 Command Fine Delay Current 110ps
Ch1Ch2 CommonClock Setting Auto
Ch1 RDCAS GNT-Chip Delay Auto
Ch1 WRCAS GNT-Chip Delay Auto
Ch1 Command to CS Delay Auto
Ch2 RDCAS GNT-Chip Delay Auto
Ch2 WRCAS GNT-Chip Delay Auto
Ch2 Command to CS Delay Auto
Item Help
Menu Level ▸▸
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The screen above list all the fields available in the Clock Setting Fine Delay submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

DLL and RECOMP Settings

This field is used to configure the DLL and RECOMP settings. The options are Auto and By Menu.

CH1 DRAM Default Skew and CH2 DRAM Default Skew

These fields are used to select the DRAM's default skew. The options are Model 0 to Model 7.

RECOMP Setting

This field is used to configure the RECOMP setting.

Fine Delay Step Degree

This is used to select the fine delay step degree. The options are 10ps to 160ps.

Ch1 Clock Crossing Setting and Ch2 Clock Crossing Setting

The options are Auto, More Aggressive, Aggressive, Nominal, Relaxed and More Relaxed.

DIMM Clock Fine Delay, Ch Control Fine Delay and Ch Command Fine Delay

The options are Current, 1 DEG to 31 DEG.

Ch1Ch2 CommonClock Setting

The options are Auto, More Aggressive, Aggressive, Nominal, Relaxed and More Relaxed.

Ch1 RDCAS GNT-Chip Delay

The options are Auto, 1CLK to 7CLK.

Ch1 WRCAS GNT-Chip Delay

The options are Auto, 1CLK to 7CLK.

Ch1 Command to CS Delay

The options are Auto, 1CLK to 7CLK.

Ch2 RDCAS GNT-Chip Delay

The options are Auto, 1CLK to 7CLK.

Ch2 WRCAS GNT-Chip Delay

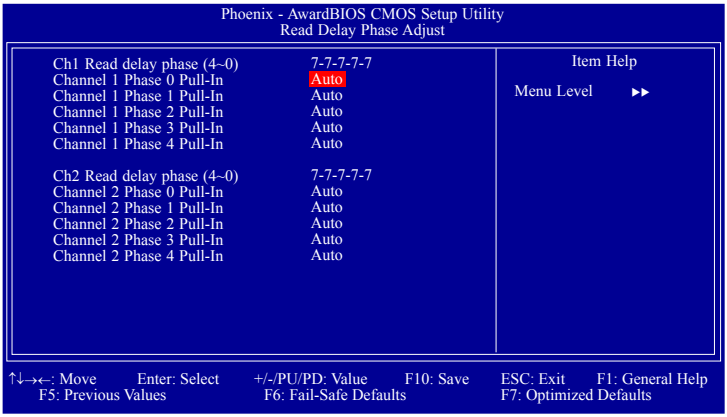
The options are Auto, 1CLK to 7CLK.

Ch2 Command to CS Delay

The options are Auto, 1CLK to 7CLK.

Read Delay Phase Adjust

Move the cursor to this field and press <Enter>. The following screen will appear.


Phoenix - AwardBIOS CMOS Setup Utility
Read Delay Phase Adjust
Ch1 Read delay phase (4~0) 7-7-7-7-7
Channel 1 Phase 0 Pull-In Auto
Channel 1 Phase 1 Pull-In Auto
Channel 1 Phase 2 Pull-In Auto
Channel 1 Phase 3 Pull-In Auto
Channel 1 Phase 4 Pull-In Auto
Ch2 Read delay phase (4~0) 7-7-7-7-7
Channel 2 Phase 0 Pull-In Auto
Channel 2 Phase 1 Pull-In Auto
Channel 2 Phase 2 Pull-In Auto
Channel 2 Phase 3 Pull-In Auto
Channel 2 Phase 4 Pull-In Auto
Item Help
Menu Level ▸▸
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

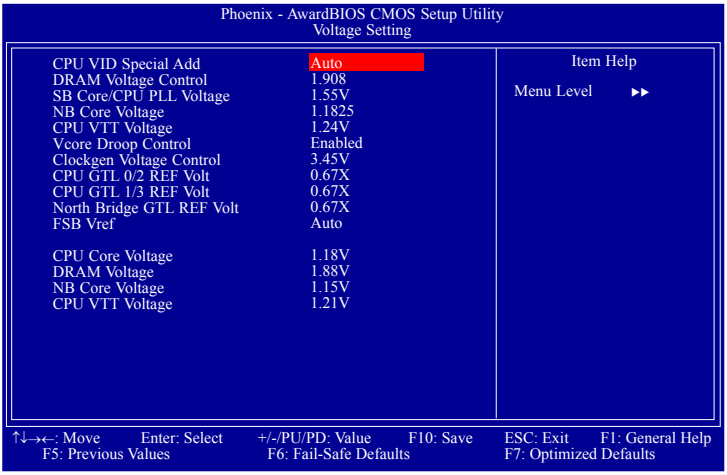
The settings on the screen are for reference only. Your version may not be identical to this one.

Channel Phase 0 Pull-In to Channel Phase 4 Pull-In

The options are Auto and Enabled.

Voltage Setting

Move the cursor to this field and press <Enter>. The following screen will appear.



The settings on the screen are for reference only. Your version may not be identical to this one.

CPU VID Special Add

This field provides more options to further adjust the voltage of the CPU. The options are Auto, 100.23% to 114.88%.

DRAM Voltage Control

This field allows you to manually select higher voltage supplied to the DRAM.

SB Core/CPU PLL Voltage

The options are 1.55V, 1.75V, 1.95V and 2.15V.

NB Core Voltage

The options are 1.140V to 1.740V.

CPU VTT Voltage

This field is used to select the CPU's voltage.

Vcore Droop Control

This field is used to enable or disable the Vcore Droop control.

Clockgen Voltage Control

This field is used to select the clock generator's voltage.

CPU GTL 0/2 REF Volt and CPU GTL 1/3 REF Volt

These fields are used to configure the CPU GTL REF voltage. The options are 0.6075 to 0.7025.

North Bridge GTL REF Volt

Leave this in its default setting.

FSB Vref

This field is used to configure the FSB Vref. The options are Auto, 21 to 00.

CPU Core Voltage

This field will show the CPU's current voltage.

DRAM Voltage

This field will show the DRAM's current voltage.

NB Core Voltage

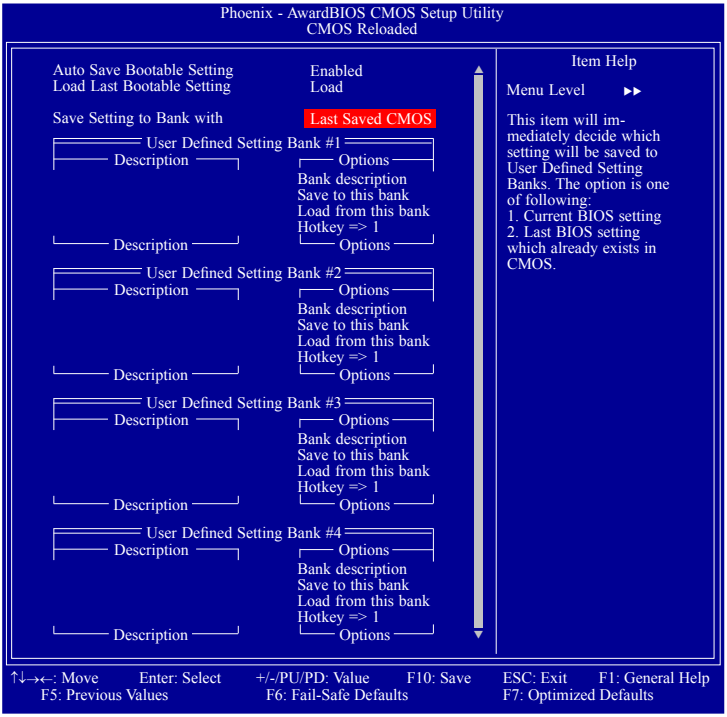
This field will show the NB's current core voltage.

CPU VTT Voltage

This field will show the HT Link's current voltage.

CMOS Reloaded

The CMOS Reloaded submenu allows you to save different configurations and when needed, allows you to conveniently restore one of these previously saved configurations. Highlight CMOS Reloaded in the main menu then press <Enter>.



The screen above list all the fields available in the CMOS Reloaded submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

CMOS Reloaded is especially helpful to overclockers who often go through the tiresome trial and error process of repeatedly changing the BIOS settings to come up with the most ideal overclocked setting. By being able to save and load the settings, it eliminates the tedious job of remembering several settings and/or repeatedly resetting settings during the trial process. The settings are stored in the SEEPROM. SEEPROM is divided into 5 banks - the backup bank and the 4 user defined banks.

Auto Save Bootable Setting

This field is used to automatically save the last bootable setting from CMOS to an area in the SEEPROM referred to as the backup bank. To use this function:

1. Set this field to Enabled.
2. Select "Save & Exit Setup" in the main menu then press <Enter>.
3. Type <Y> then press <Enter>.

If the changes to the setting allowed the system to boot, the setting will be stored in the SEEPROM. In other words, if the system did not boot up, the setting will not be stored. You may then follow the steps in the next section to load the last bootable setting.

Load Last Bootable Setting

If, during the trial and error process, the setting resulted to the system's instability or worse yet, not being able to boot up the system, please follow the steps below to use the Load function.

Note:
You can use the Load function only if you have set the "Auto Save Bootable Setting" to Enabled.

1. If the system did not boot up properly but you were able to enter the BIOS utility:
   a. Select "CMOS Reloaded" in the main menu then press <Enter>.
   b. Move the cursor to "Load Last Bootable Setting" then press "Load".
   c. Press <Y> to load the last bootable setting that was stored in the backup bank.
2. If you cannot enter the BIOS utility:
   a. Use the Clear CMOS jumper to clear the CMOS. Refer to chapter 2 for more information about clearing CMOS.
   b. Enter the BIOS utility then perform steps 1a to 1c.

Saving, Loading and Naming BIOS Settings

For overclockers who require different sets of settings for various system environments or operating systems, CMOS Reloaded allows you to save, load and name up to four sets of BIOS settings - in the "User Defined Setting Bank #1" to "User Defined Setting Bank #4" fields.

Save Setting to Bank With

This field is used to select the type of setting you would like saved to a User Defined Setting Bank when you use the "Save to this Bank" function of that bank.

Current BIOS Setting
This option will save the current BIOS setting to the User Defined Setting Bank.

Last BIOS Setting
This option will save the last saved BIOS setting to the User Defined Setting Bank.

User Defined Setting Bank #1/2/3/4

Bank Description
To name the BIOS setting, move the cursor to "Bank Description" then press <Enter>. You can enter up to 60 characters. Providing a name to the BIOS setting will allow you to easily remember the settings in the bank.

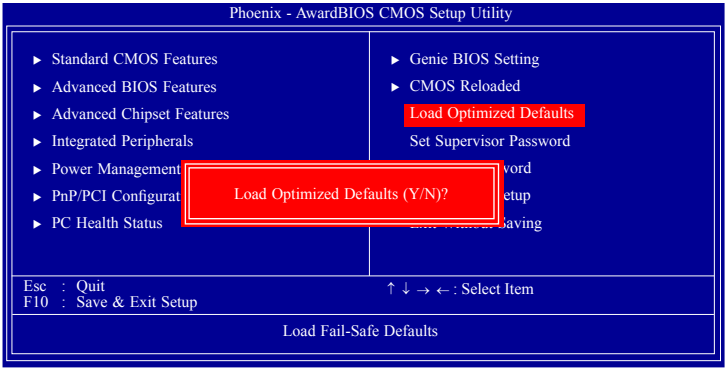
Save to this Bank
To save the BIOS setting, move the cursor to "Save to this Bank" then press <Enter>. Type <Y> then press <Enter>. This will save the current setting or the last saved setting to this bank; depending on the option selected in the "Save Setting to Bank With" field. If you want to immediately reboot to use the new settings, make sure to save before you exit the BIOS setup utility by selecting "Y" in the "Save & Exit Setup" submenu.

Load from this Bank
To load the setting saved in the bank, move the cursor to "Load from this Bank" then press <Enter>. The setting in this bank will replace the current setting. Make sure to save before you exit the BIOS setup utility by selecting "Y" in the "Save & Exit Setup" submenu.

Hotkey
You can now load a BIOS setting during system boot up; bypassing the lengthy process of entering the BIOS utility to load a setting. Move the cursor to "Hotkey" then press <Enter>. Select the key you would like to use to load the settings from the bank. When the system boots up, press the key to load the setting.

Load Optimized Defaults

The "Load Optimized Defaults" option loads optimized settings from the BIOS ROM. Use the default values as standard values for your system. Highlight this option in the main menu and press <Enter>.

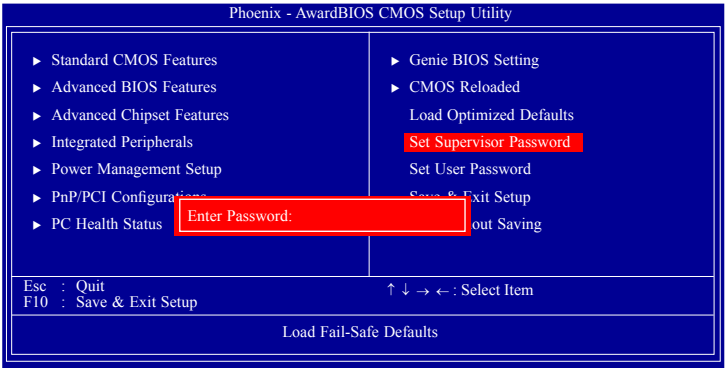


Type <Y> and press <Enter> to load the Setup default values.

Set Supervisor Password

If you want to protect your system and setup from unauthorized entry, set a supervisor's password with the "System" option selected in the Advanced BIOS Features. If you want to protect access to setup only, but not your system, set a supervisor's password with the "Setup" option selected in the Advanced BIOS Features. You will not be prompted for a password when you cold boot the system.

Use the arrow keys to highlight "Set Supervisor Password" and press <Enter>.



Type in the password. You are limited to eight characters. When done, the message below will appear:

Confirm Password:

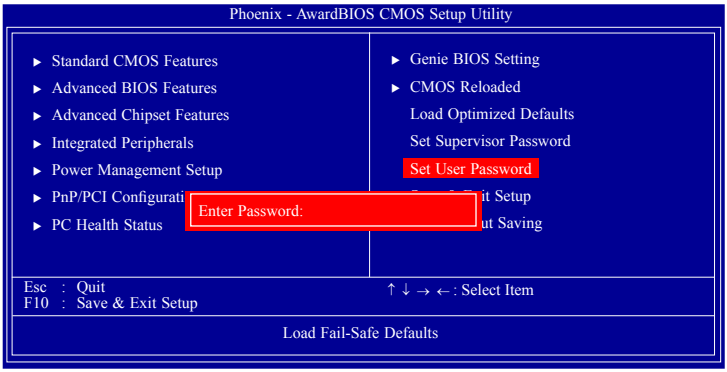
You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight "Set Supervisor Password" and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.

Set User Password

If you want another user to have access only to your system but not to setup, set a user's password with the "System" option selected in the Advanced BIOS Features. If you want a user to enter a password when trying to access setup, set a user's password with the "Setup" option selected in the Advanced BIOS Features.

Using user's password to enter Setup allows a user to access only "Set User Password" that appears in the main menu screen. Access to all other options is denied.

Use the arrow keys to highlight "Set User Password" and press <Enter>.



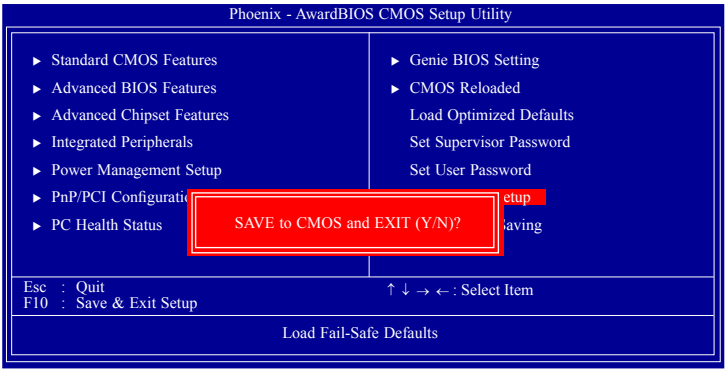
Type in the password. You are limited to eight characters. When done, the message below will appear:

Confirm Password:

You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight "Set User Password" and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.

Save & Exit Setup

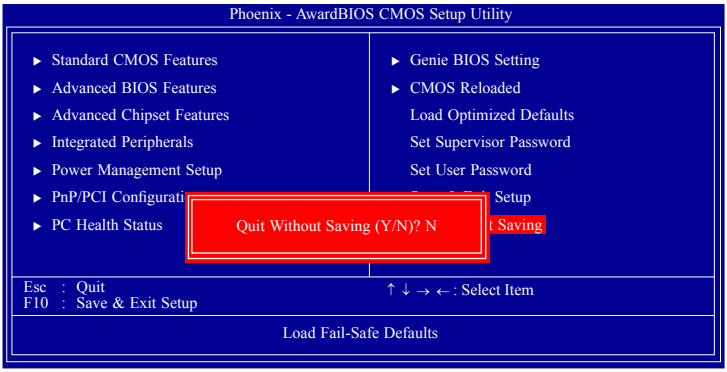
When all the changes have been made, highlight "Save & Exit Setup" and press <Enter>.



Type "Y" and press <Enter>. The modifications you have made will be written into the CMOS memory, and the system will reboot. You will once again see the initial diagnostics on the screen. If you wish to make additional changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or <Del> after memory testing is done.

Exit Without Saving

When you do not want to save the changes you have made, highlight "Exit Without Saving" and press <Enter>.



Type "Y" and press <Enter>. The system will reboot and you will once again see the initial diagnostics on the screen. If you wish to make any changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or <Del> after memory testing is done.

RAID BIOS (LP BI P45-T2RS Elite)

The Intel RAID BIOS utility is used to configure and manage RAID on Serial ATA drives.

When the system powers-up and all drives have been detected, the Intel RAID BIOS status message screen will appear. Press the <Ctrl> and <I> keys simultaneously to enter the utility. The utility allows you to build a RAID system on Serial ATA drives.

Important:
Before creating RAID, make sure you have installed the Serial ATA drives and connected the data cables otherwise you won't be able to enter the RAID BIOS utility.

Refer to chapter 5 for steps in configuring RAID.

Updating the BIOS

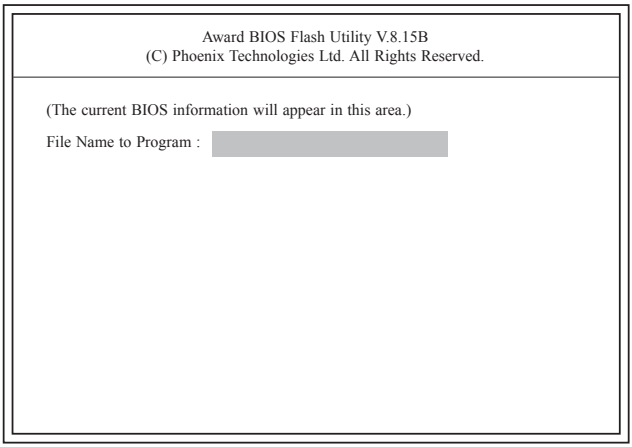
To update the BIOS, you will need the new BIOS file and a flash utility, AWDFLASH.EXE. You can download them from DFI's web site or contact technical support or your sales representative.

1. Save the new BIOS file along with the flash utility AWDFLASH.EXE to a floppy disk.

2. Reboot the system and enter the Award BIOS Setup Utility to set the first boot drive to "Floppy".

3. Save the setting and reboot the system.

4. After the system booted from the floppy disk, execute the flash utility by typing AWDFLASH.EXE. The following screen will appear.


Award BIOS Flash Utility V.8.15B
(C) Phoenix Technologies Ltd. All Rights Reserved.
(The current BIOS information will appear in this area.)
File Name to Program :

5. Type the new BIOS file name onto the gray area that is next to "File Name to Program" then press <Enter>.

6. The following will appear.

   Do You Want to Save BIOS (Y/N)

   This question refers to the current existing BIOS in your system. We recommend that you save the current BIOS and its flash utility; just in case you need to reinstall the BIOS. To save the current BIOS, press <Y> then enter the file name of the current BIOS. Otherwise, press <N>.

7. The following will then appear.

   Press "Y" to Program or "N" to Exit

8. Press <Y> to flash the new BIOS.

Chapter 4 - Supported Software

The DVD that came with the system board contains drivers, utilities and software applications required to enhance the performance of the system board.

Insert the DVD into an optical drive. The screen shown below will appear. If after inserting the DVD, "Autorun" did not automatically start, please go directly to the root directory of the DVD and double-click "Setup".

Intel Chipset Device Software

On the top row of the screen, click the 1st icon to open the Chipset Driver menu.

1. Click "Intel(R) Chipset Device Software".

2. The setup program is now ready to install the utility. Click Next.

Intel® Chipset Device Software
Intel® Chipset Device Software
intel
Welcome to the Setup Program
This setup program will install the Intel® Chipset Device Software onto this computer. It is strongly recommended that you exit all Windows* programs before continuing.
< Back
Next >
Cancel
Intel® Installation Framework

3. Read the license agreement then click Yes.

Intel® Chipset Device Software
Intel® Chipset Device Software
License Agreement
intel
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
< Back
Yes
No
Intel® Installation Framework

4. Go through the readme document for system requirements and installation tips then click Next.

Intel® Chipset Device Software
Intel® Chipset Device Software
Readme File Information
intel
Refer to the Readme file below to view the system requirements and installation information. Press the Page Down key to view the rest of the file.
****
* Product: Intel(R) Chipset Device Software
* Release: Production Version
* Version: 8.3.0.1013
* Target Chipset#: Q33/G33/G31/P35
* Date: March 05 2007
****
< Back
Next >
Cancel
Intel® Installation Framework

5. The setup program is now installing the driver. Click Next to continue.

Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Progress
intel
Please wait while the following setup operations are performed:
Installing Driver: Intel(R) ICH9 Family USB Universal Host Controller - 2938
Version: 8.3.0.1011
Installing Driver: Intel(R) ICH9 Family USB Universal Host Controller - 2939
Version: 8.3.0.1011
Installing Driver: Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293A
Version: 8.3.0.1011
Installing Driver: Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293C
Version: 8.3.0.1011
Click Next to continue.
Next
Intel® Installation Framework

6. Click "Yes, I want to restart this computer now" then click Finish.

   Restarting the system will allow the new software installation to take effect.

Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Is Complete
intel
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

Graphics Driver

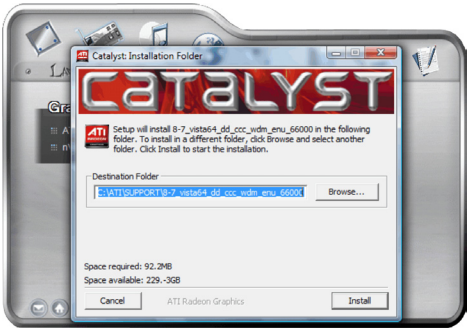
On the top row of the screen, click the 2nd icon to open the Graphics Driver menu.

The DVD provides both ATI and nVidia graphics drivers. Select the driver according to the graphics card that you are using.

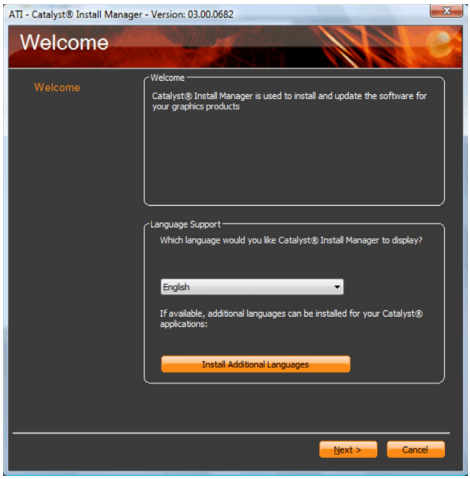
ATi Radeon Drivers

1. Click "ATi Radeon Drivers".

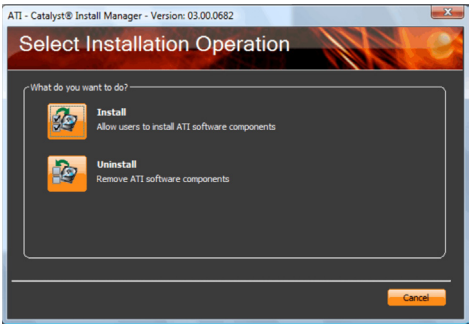
2. Click Install to install to the destination folder or click Browse to select another folder.


Catalyst: Installation Folder
CATALYST
Setup will install 8-7_vista64_dd_ccc_wdm_enu_66000 in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
Browse...
Space required: 92.2MB
Space available: 229.-3GB
Cancel
ATI Radeon Graphics
Install

3. Select the language you like Catalyst Install Manager to display then click Next.

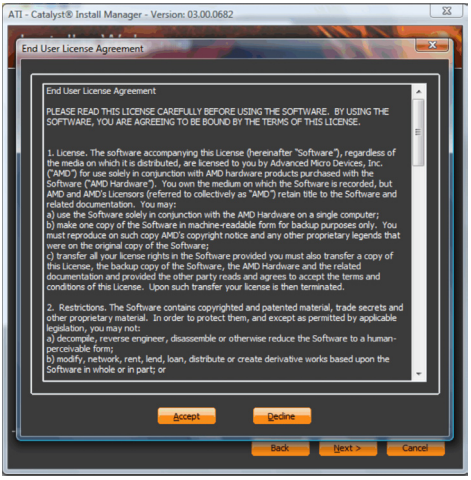

ATI - Catalyst® Install Manager - Version: 03.00.0682
Welcome
Welcome
Welcome
Catalyst® Install Manager is used to install and update the software for your graphics products
Language Support
Which language would you like Catalyst® Install Manager to display?
English
If available, additional languages can be installed for your Catalyst® applications:
Install Additional Languages
Next >
Cancel

4. You are now ready to install the driver. Click Install.

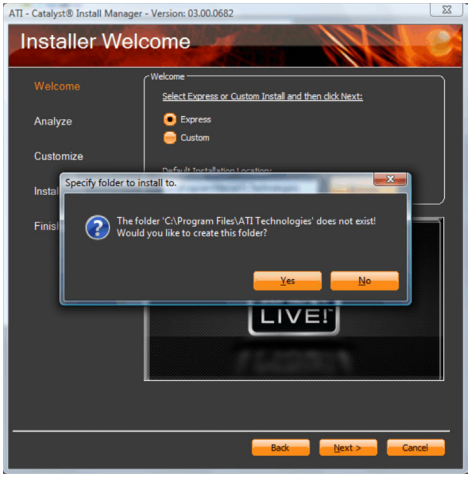


5. Select the component (Express or Custom) you want to install then click Next.

6. Read the license agreement then click Accept.


ATI - Catalyst® Install Manager - Version: 03.00.0682
End User License Agreement
End User License Agreement
PLEASE READ THIS LICENSE CAREFULLY BEFORE USING THE SOFTWARE. BY USING THE SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE.
1. License. The software accompanying this License (hereinafter "Software"), regardless of the media on which it is distributed, are licensed to you by Advanced Micro Devices, Inc. ("AMD") for use solely in conjunction with AMD hardware products purchased with the Software ("AMD Hardware"). You own the medium on which the Software is recorded, but AMD and AMD's Licensors (referred to collectively as "AMD") retain title to the Software and related documentation. You may:
a) use the Software solely in conjunction with the AMD Hardware on a single computer;
b) make one copy of the Software in machine-readable form for backup purposes only. You must reproduce on such copy AMD's copyright notice and any other proprietary legends that were on the original copy of the Software;
c) transfer all your license rights in the Software provided you must also transfer a copy of this License, the backup copy of the Software, the AMD Hardware and the related documentation and provided the other party reads and agrees to accept the terms and conditions of this License. Upon such transfer your license is then terminated.
2. Restrictions. The Software contains copyrighted and patented material, trade secrets and other proprietary material. In order to protect them, and except as permitted by applicable legislation, you may not:
a) decompile, reverse engineer, disassemble or otherwise reduce the Software to a human-perceivable form;
b) modify, network, rent, lend, loan, distribute or create derivative works based upon the Software in whole or in part; or
Accept
Decline
Back
Next >
Cancel

7. Click Yes to create the ATI Technologies folder.

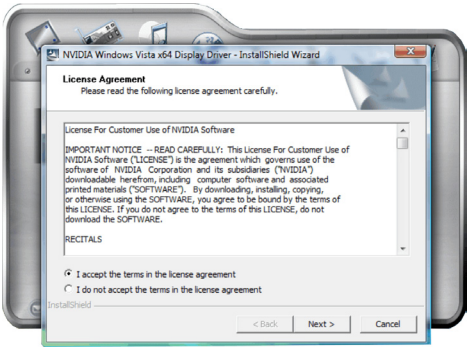


8. Follow the remainder of the steps shown on the screen then restart the system to allow the new driver installation to take effect.

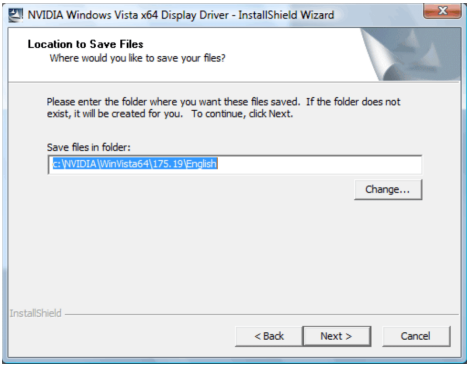
nVidia GForce 8 Series Drivers

1. Click "nVidia GForce 8 Series Drivers".

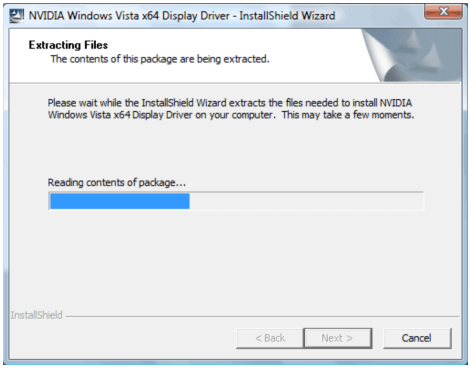
2. Read the license agreement then click "I accept the terms in the license agreement". Click Next.


NVIDIA Windows Vista x64 Display Driver - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
License For Customer Use of NVIDIA Software
IMPORTANT NOTICE -- READ CAREFULLY: This License For Customer Use of NVIDIA Software ("LICENSE") is the agreement which governs use of the software of NVIDIA Corporation and its subsidiaries ("NVIDIA") downloadable herefrom, including computer software and associated printed materials ("SOFTWARE"). By downloading, installing, copying, or otherwise using the SOFTWARE, you agree to be bound by the terms of this LICENSE. If you do not agree to the terms of this LICENSE, do not download the SOFTWARE.
RECITALS
I accept the terms in the license agreement
I do not accept the terms in the license agreement
InstallShield
< Back
Next >
Cancel

3. Click Next to install to the destination folder or click Change to select another folder.


NVIDIA Windows Vista x64 Display Driver - InstallShield Wizard
Location to Save Files
Where would you like to save your files?
Please enter the folder where you want these files saved. If the folder does not exist, it will be created for you. To continue, click Next.
Save files in folder:
C:\NVIDIA\WinVista64\175.19\English
Change...
InstallShield
< Back
Next >
Cancel

4. The setup program will extract the files needed to install the driver on your computer. After all files have been extracted, click Next.


NVIDIA Windows Vista x64 Display Driver - InstallShield Wizard
Extracting Files
The contents of this package are being extracted.
Please wait while the InstallShield Wizard extracts the files needed to install NVIDIA Windows Vista x64 Display Driver on your computer. This may take a few moments.
Reading contents of package...
InstallShield
< Back
Next >
Cancel

5. You are now ready to install the driver. Click Next.

NVIDIA Windows Vista [64-bit] Display Drivers
Welcome to the InstallShield Wizard for NVIDIA
Welcome to NVIDIA Setup. This will install NVIDIA Display Drivers on your computer.
InstallShield
< Back
Next >
Cancel

6. Click "Yes, I want to restart my computer now" then click Finish.

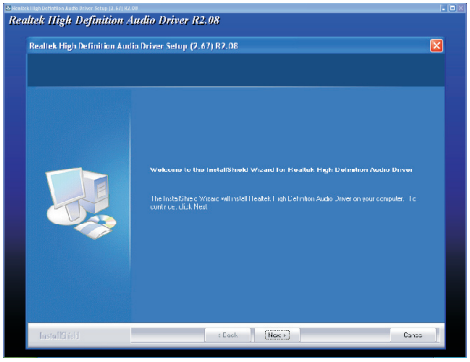
   Restarting the system will allow the new driver installation to take effect.

Realtek Audio Drivers

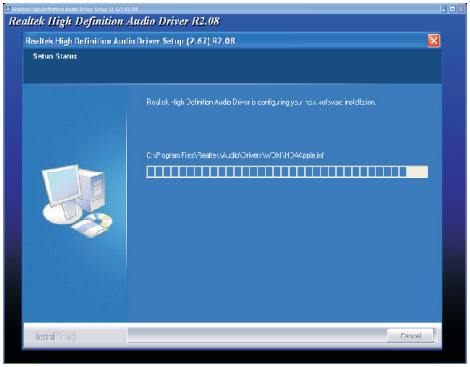
On the top row of the screen, click the 3rd icon to open the Audio Driver menu.

1. Click "Realtek Audio Drivers".

2. The setup program is now ready to install the driver. Click Next.

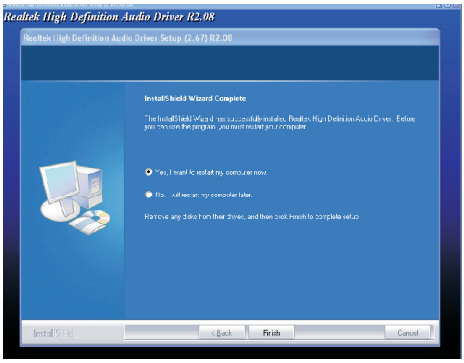


3. The setup program is currently installing the driver.



4. Click "Yes, I want to restart my computer now" then click Finish.

   Restarting the system will allow the new driver installation to take effect.

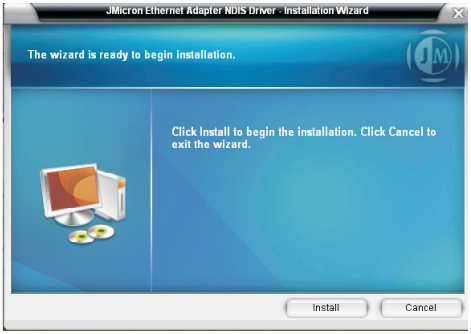


JMC250 LAN Drivers

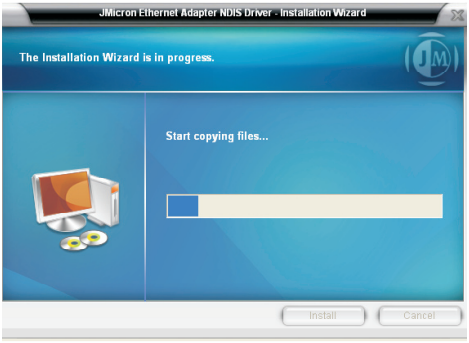
On the top row of the screen, click the 4th icon to open the Network Driver menu.

1. Click "JMC250 LAN Drivers".

2. Click Install to begin installation.


JMicron Ethernet Adapter NDIS Driver - Installation Wizard
The wizard is ready to begin installation.
Click Install to begin the installation. Click Cancel to exit the wizard.
Install
Cancel

3. The setup program is now installing the driver.



4. Click Finish.

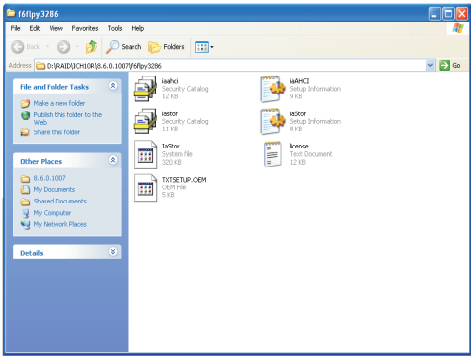
JMicron Ethernet Adapter NDIS Driver - Installation Wizard
The Installation Wizard has successfully installed the driver.
Click Finish to exit the wizard.
Finish
Cancel

RAID Floppy Driver

On the top row of the screen, click the 5th icon to open the RAID Driver menu.

1. Click "RAID Floppy Driver".

2. Windows Explorer will appear showing the folder where the driver files are located in the DVD.



3. You must create a RAID driver floppy diskette which is needed when you install the RAID driver during Windows installation.

   Run the appropriate execution file.

4. Insert a blank floppy diskette then click OK.

5. The system will format and write the necessary driver files into the diskette.

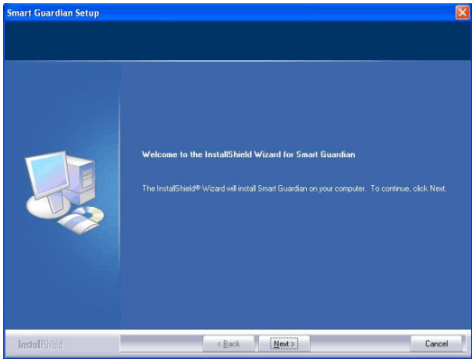
Smart Guardian

The Smart Guardian utility is capable of monitoring the system's temperature, fan speed, voltage, etc. and allows you to manually set a range (Highest and Lowest Limit) to the items being monitored. If the settings/values are over or under the set range, a warning message will pop-up. The utility can also be configured so that a beeping alarm will sound whenever an error occurs. We recommend that you use the "Default Setting" which is the ideal setting that would keep the system in good working condition.

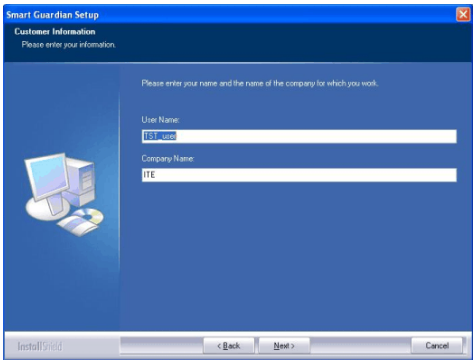
On the top row of the screen, click the 6th icon to open the Utility menu.

1. Click "Smart Guardian".

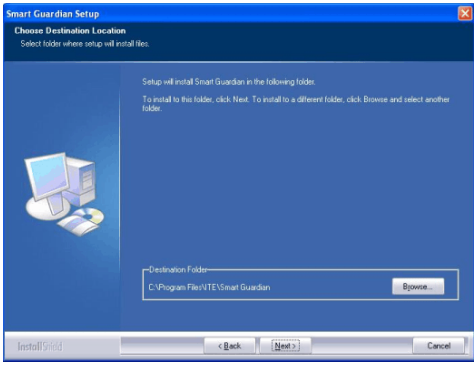
2. The setup program is now ready to install the utility. Click Next.


Smart Guardian Setup
Welcome to the InstallShield Wizard for Smart Guardian
The InstallShield® Wizard will install Smart Guardian on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

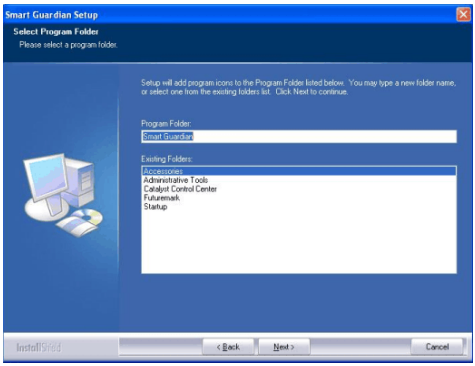
3. Enter the necessary information then click Next.



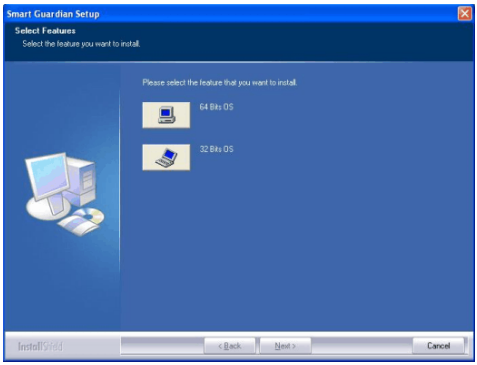
4. Click Next to install to the designated folder or click Browse to select another folder.


Smart Guardian Setup
Choose Destination Location
Select folder where setup will install files.
Setup will install Smart Guardian in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\ITE\Smart Guardian
Browse...
InstallShield
< Back
Next >
Cancel

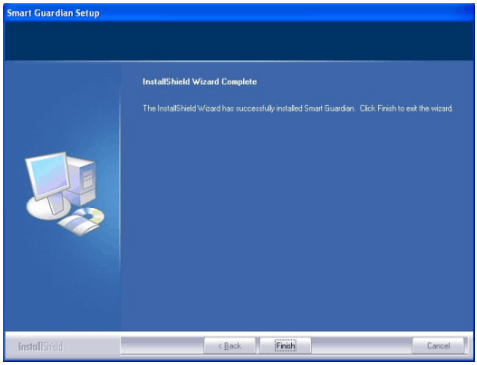
5. Click Next to add the program icon to the Program Folder.


Smart Guardian Setup
Select Program Folder
Please select a program folder.
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.
Program Folder:
Smart Guardian
Existing Folders:
Accessories
Administrative Tools
Catalyst Control Center
Futuremark
Startup
InstallShield
< Back
Next >
Cancel

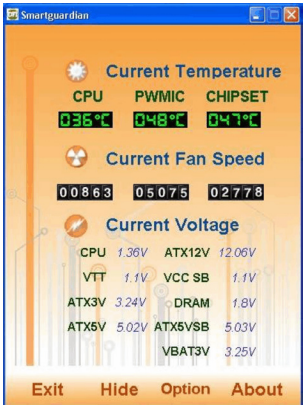
6. Select the option in accordance to the operating system that you are using then click Next.



7. Click Finish. Reboot the system for the driver to take effect.



8. After rebooting the system, you will find the Smart Guardian icon displayed on the screen. Double-click the icon the run the utility.

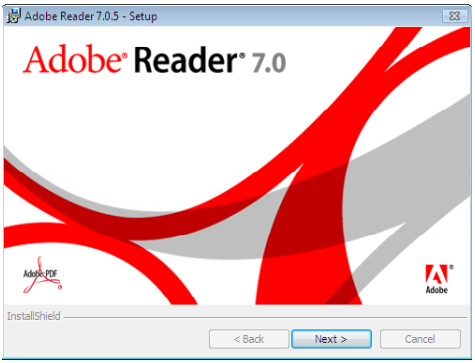


Adobe Acrobat Reader 7.05

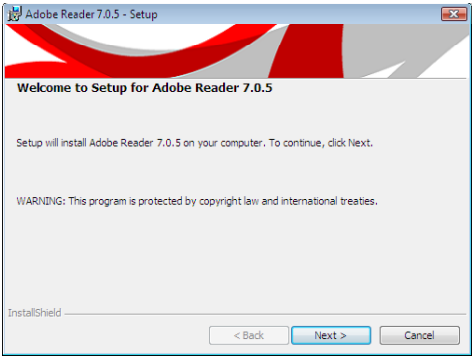
On the top row of the screen, click the last icon to open the Manuals menu.

1. Click "Adobe Acrobat Reader 7.05".

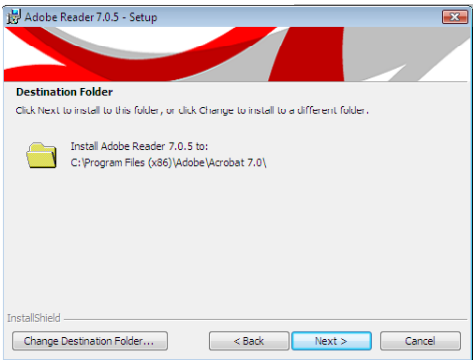
2. Click Next to continue.



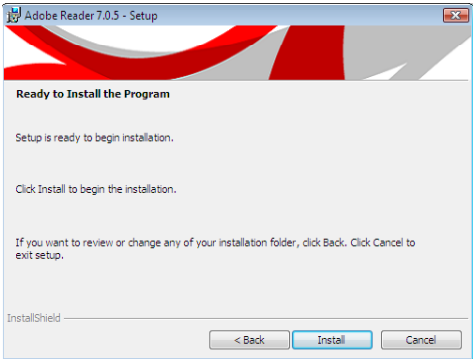
3. Setup is now ready to install. Click Next.


Adobe Reader 7.0.5 - Setup
Welcome to Setup for Adobe Reader 7.0.5
Setup will install Adobe Reader 7.0.5 on your computer. To continue, click Next.
WARNING: This program is protected by copyright law and international treaties.
InstallShield
< Back
Next >
Cancel

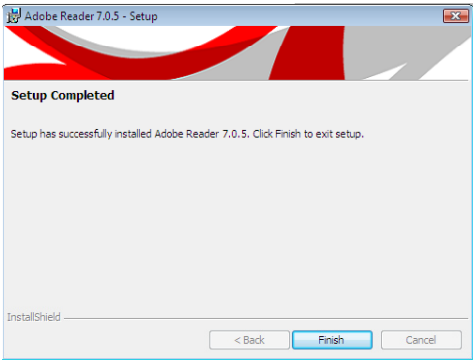
4. Click Next to install or click Change Destination Folder to select another folder.


Adobe Reader 7.0.5 - Setup
Destination Folder
Click Next to install to this folder, or click Change to install to a different folder.
Install Adobe Reader 7.0.5 to:
C:\Program Files (x86)\Adobe\Acrobat 7.0\
InstallShield
Change Destination Folder...
< Back
Next >
Cancel

5. Click Install to begin installation.


Adobe Reader 7.0.5 - Setup
Ready to Install the Program
Setup is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation folder, click Back. Click Cancel to exit setup.
InstallShield
< Back
Install
Cancel

6. Click Finish to exit instalaion.



Installation Notes

1. "Autorun" ONLY supports the Windows® XP and Windows® Vista operating systems. If after inserting the DVD, "Autorun" did not automatically start, please go directly to the root directory of the DVD and double-click "Setup".

2. The drivers for Windows® 2000 are also included in the DVD however "Autorun" is not supported for this operating system. Therefore you must manually install the drivers from the respective folders of each driver.

3. All steps or procedures to install software drivers are subject to change without notice as the softwares are occassionally updated. Please contact technical support or your sales representative for the latest version of the drivers or software applications.

Chapter 5 - RAID (LP BI P45-T2RS Elite)

The Intel ICH10R chip alows configuring RAID on Serial ATA drives. It supports RAID 0, RAID 1, RAID 0+1 and RAID 5.

RAID Levels

RAID 0 (Striped Disk Array without Fault Tolerance)

RAID 0 uses two new identical hard disk drives to read and write data in parallel, interleaved stacks. Data is divided into stripes and each stripe is written alternately between two disk drives. This improves the I/O performance of the drives at different channel; however it is not fault tolerant. A failed disk will result in data loss in the disk array.

RAID 1 (Mirroring Disk Array with Fault Tolerance)

RAID 1 copies and maintains an identical image of the data from one drive to the other drive. If a drive fails to function, the disk array management software directs all applications to the other drive since it contains a complete copy of the drive's data. This enhances data protection and increases fault tolerance to the entire system. Use two new drives or an existing drive and a new drive but the size of the new drive must be the same or larger than the existing drive.

RAID 0+1 (Striping and Mirroring)

RAID 0+1 is a combination of data striping and data mirroring providing the benefits of both RAID 0 and RAID 1. Use four new drives or an existing drive and three new drives for this configuration.

RAID 5

RAID 5 stripes data and parity information across hard drives. It is fault tolerant and provides better hard drive performance and more storage capacity.

Settings

To enable the RAID function, the following settings are required.

1. Connect the Serial ATA drives.
2. Configure Serial ATA in the Award BIOS.
3. Configure RAID in the RAID BIOS.
4. Install the RAID driver during OS installation.
5. Install the Intel Matrix Storage Manager

Step 1: Connect the Serial ATA Drives

Refer to chapter 2 for details on connecting the Serial ATA drives.

Important:

1. Make sure you have installed the Serial ATA drives and connected the data cables otherwise you won't be able to enter the RAID BIOS utility.
2. Treat the cables with extreme caution especially while creating RAID. A damaged cable will ruin the entire installation process and operating system. The system will not boot and you will lost all data in the hard drives. Please give special attention to this warning because there is no way of recovering back the data.

Step 2: Configure Serial ATA in the Award BIOS

1. Power-on the system then press <Del> to enter the main menu of the Award BIOS.
2. Configure Serial ATA in the appropriate fields.
3. Press <Esc> to return to the main menu of the BIOS setup utility. Select "Save & Exit Setup" then press <Enter>.
4. Type <Y> and press <Enter>.
5. Reboot the system.

Step 3: Configure RAID in the RAID BIOS

When the system powers-up and all drives have been detected, the Intel RAID BIOS status message screen will appear. Press the <Ctrl> and <I> keys simultaneously to enter the utility. The utility allows you to build a RAID system on Serial ATA drives.

Step 4: Install the RAID Driver During OS Installation

The RAID driver must be installed during the Windows® XP or Windows® 2000 installation using the F6 installation method. This is required in order to install the operating system onto a hard drive or RAID volume when in RAID mode or onto a hard drive when in AHCI mode.

1. Start Windows Setup by booting from the installation CD.

2. Press <F6> when prompted in the status line with the 'Press F6 if you need to install a third party SCSI or RAID driver' message.

3. Press <S> to "Specify Additional Device".

4. At this point you will be prompted to insert a floppy disk containing the RAID driver. Insert the RAID driver diskette.

5. Locate for the drive where you inserted the diskette then select RAID or AHCI controller that corresponds to your BIOS setup. Press <Enter> to confirm.

You have successfully installed the driver. However you must continue installing the OS. Leave the floppy disk in the floppy drive until the system reboots itself because Windows setup will need to copy the files again from the floppy disk to the Windows installation folders. After Windows setup has copied these files again, remove the floppy diskette so that Windows setup can reboot as needed.

Step 5: Install the Intel Matrix Storage Manager

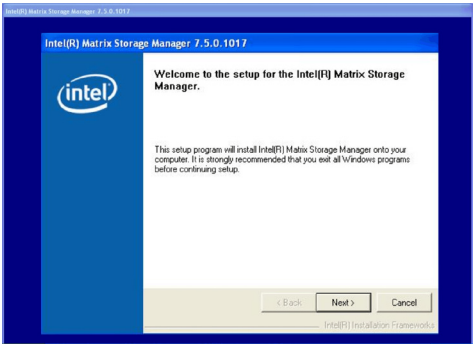
The Intel Matrix Storage Manager can be installed from within Windows. It allows RAID volume management (create, delete, migrate) from within the operating system. It will also display useful SATA device and RAID volume information. The user interface, tray icon service and monitor service allow you to monitor the current status of the RAID volume and/or SATA drives. It enables enhanced performance and power management for the storage subsystem.

1. Insert the DVD into an optical drive.

2. On the top row of the screen, click the 1st icon to open the Chipset Driver menu.

3. Click "Intel(R) Matrix Storage Manager".

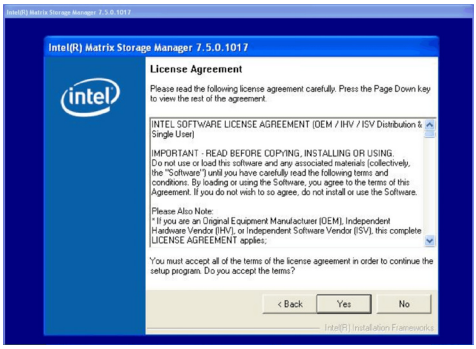
4. Setup is now ready to install the utility. Click Next.


Intel(R) Matrix Storage Manager 7.5.0.1017
Welcome to the setup for the Intel(R) Matrix Storage Manager.
This setup program will install Intel(R) Matrix Storage Manager onto your computer. It is strongly recommended that you exit all Windows programs before continuing setup.
< Back
Next >
Cancel
InstallShield

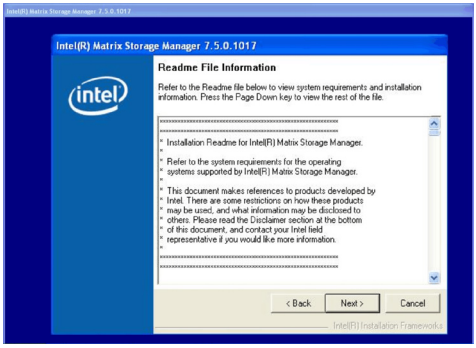
5. Read the warning carefully then click Next.

Intel(R) Matrix Storage Manager 7.5.0.1017
Warning!
Please read the following information:
The driver you are about to install might be used to control the hard drive from which this computer is booting or to control a hard drive that contains important data.
For this reason, you cannot remove or uninstall this driver from the computer after installation. However, you can uninstall other, non-critical components. The following components can be uninstalled:
Intel(R) Matrix Storage Console
Help Documentation
Start Menu Shortcuts
System Tray Icon Service
Event Monitor Service
Click Next to continue the setup. Click Cancel to exit the setup.
< Back
Next >
Cancel
Intel(R) Installation Framework

6. Read the license agreement then click Yes.


Intel(R) Matrix Storage Manager 7.5.0.1017
License Agreement
Please read the following license agreement carefully. Press the Page Down key to view the rest of the agreement.
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
< Back
Yes
No
Intel(R) Installation Framework

7. Go through the readme document to view system requirements and installation information then click Next.


Intel(R) Matrix Storage Manager 7.5.0.1017
Readme File Information
Refer to the Readme file below to view system requirements and installation information. Press the Page Down key to view the rest of the file.
* Installation Readme for Intel(R) Matrix Storage Manager.
* Refer to the system requirements for the operating
* systems supported by Intel(R) Matrix Storage Manager.
* This document makes references to products developed by
* Intel. There are some restrictions on how these products
* may be used, and what information may be disclosed to
* others. Please read the Disclaimer section at the bottom
* of this document, and contact your Intel field
* representative if you would like more information.
< Back
Next >
Cancel
Intel(R) Installation Framework

8. Follow the remainder of the steps shown on the screen; clicking “next” each time you finish a step.

9. Click Finish to complete installation and reboot the system.

Appendix A - ABS: Auto Boost System

The ABS (Auto Boost System) technology provides the convenience of saving and loading several OC settings. It allows you to use the best OC setting to optimize your system's performance. You can "Auto Boost" your system by simply pressing the <F1> key.

ABS provides the following functions that are easy for users to operate.

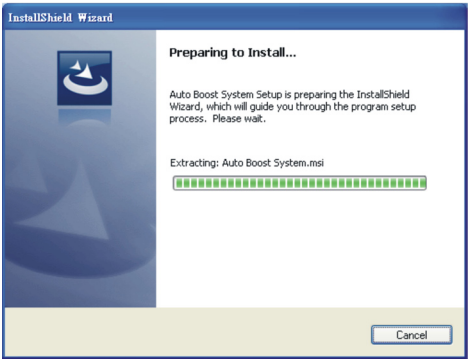
- Backup OC profile
- Load OC profile
- Exchange OC profile

Installing ABS

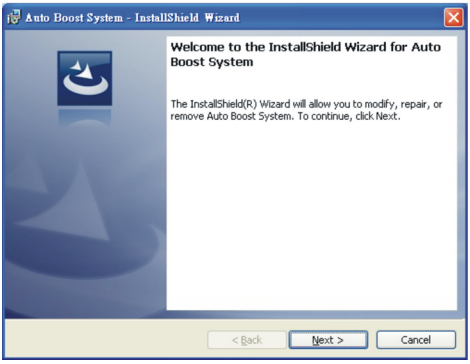
1. The ABS utility is included in the provided DVD. Insert the DVD into an optical drive. On the top row of the screen, click the 6th icon to open the Utility menu.

2. Click "Auto Boost System".

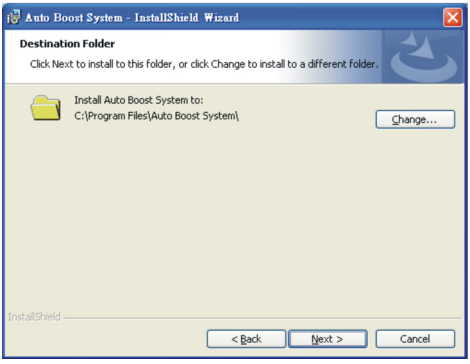
3. The installation wizard is extracting the files needed to install the utility. The wizard will lead you to complete the installation.


InstallShield Wizard
Preparing to Install...
Auto Boost System Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
Extracting: Auto Boost System.msi
Cancel

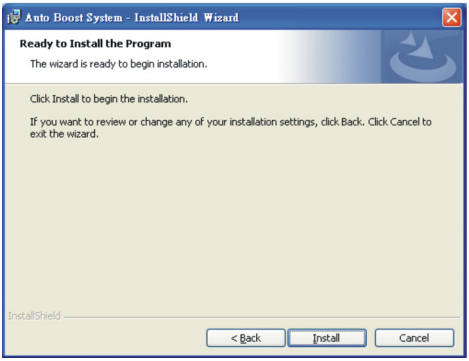
4. Setup is now ready to install the utility. Click Next.


Auto Boost System - InstallShield Wizard
Welcome to the InstallShield Wizard for Auto Boost System
The InstallShield(R) Wizard will allow you to modify, repair, or remove Auto Boost System. To continue, click Next.
< Back
Next >
Cancel

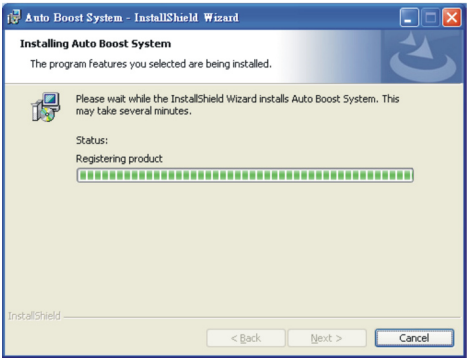
5. Click Next to install to the destination folder or click Change to select another folder.


Auto Boost System - InstallShield Wizard
Destination Folder
Click Next to install to this folder, or click Change to install to a different folder.
Install Auto Boost System to:
C:\Program Files\Auto Boost System\
Change...
InstallShield
< Back
Next >
Cancel

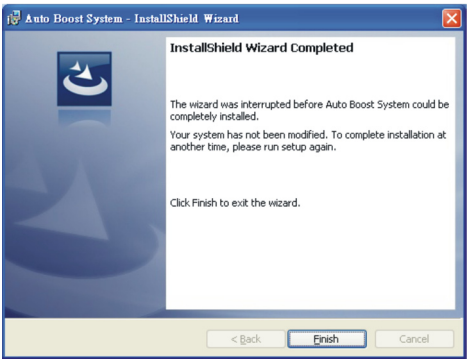
6. Click Install to begin the installation.


Auto Boost System - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

7. The installation wizard will copy all the necessary files and optimize the ABS features.

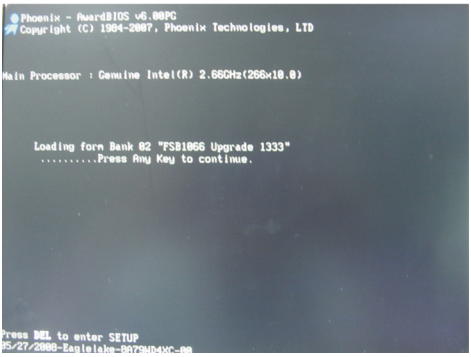

Auto Boost System - InstallShield Wizard
Installing Auto Boost System
The program features you selected are being installed.
Please wait while the InstallShield Wizard installs Auto Boost System. This may take several minutes.
Status:
Registering product
InstallShield
< Back
Next >
Cancel

8. Click Finish to exit setup.

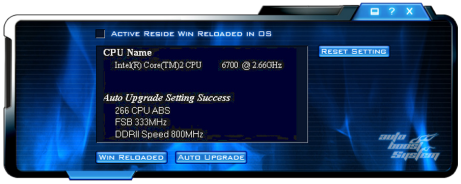

Auto Boost System - InstallShield Wizard
InstallShield Wizard Completed
The wizard was interrupted before Auto Boost System could be completely installed.
Your system has not been modified. To complete installation at another time, please run setup again.
Click Finish to exit the wizard.
< Back
Finish
Cancel

The ABS Utility

1. To run the ABS utility, power up your system then press F1. The screen will show the CPU upgrade information. Press "Any Key" to continue.

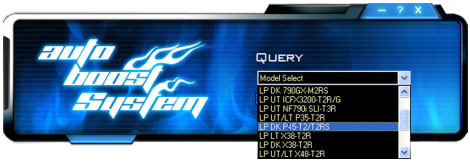

Phoenix - AwardBIOS v6.00PG
Copyright (C) 1984-2007, Phoenix Technologies, LTD
Main Processor : Genuine Intel(R) 2.66GHz(266x10.0)
Loading form Bank 02 "FSB1066 Upgrade 1333"
.....Press Any Key to continue.
Press DEL to enter SETUP

2. When the system enters the operating system, the ABS utility will appear and display the system's information. Click Auto Upgrade.



3. The screen on the right will appear.

4. Select the system board in use.

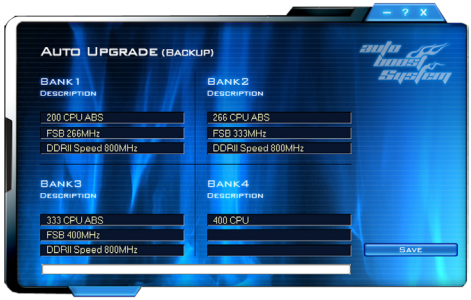


5. Click Confirm.

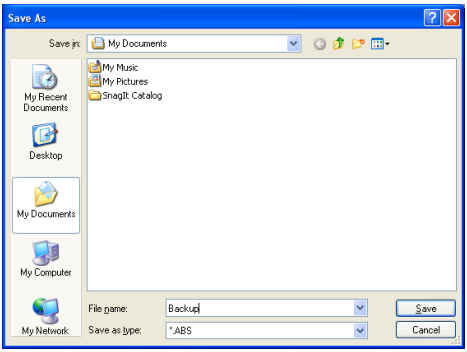
6. ABS supports Win Reloaded and Auto Upgrade features. Click Auto Upgrade.

7. Click Backup.

8. The default settings will appear on the screen. Click Save.

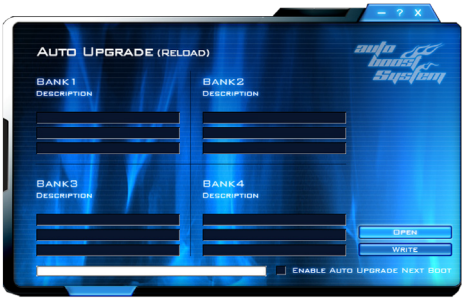


9. Enter a name for the default setting then click Save. You have just created a backup file of the board's default setting.

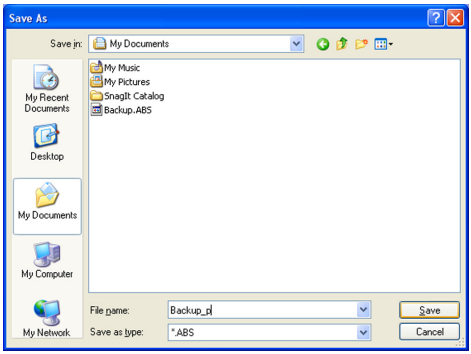


10. If in any case a new OC setting causes system instability, you can always retrieve the backup file saved earlier by clicking Reload.

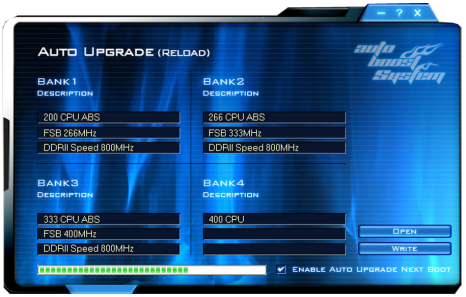
11. Click Open.



12. Select the backup file then click Open.

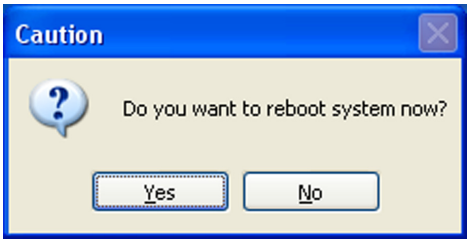


13. Click Write to load Banks 1-4 into the BIOS.



If you want the system to auto upgrade the setting the next time you boot the system, click "Enable Auto Upgrade Next Boot".

14. Click Yes to reboot.



Important:

1. We strongly recommend that you backup the default setting. If in any case your overclock setting causes system instability, you can always retrieve the default setting by reloading the backup file.
2. Everytime you change the BIOS settings, remember to always backup the file because the previous backup file will not match the new BIOS settings therefore it will not work.

Appendix B - Troubleshooting

Troubleshooting Checklist

This chapter of the manual is designed to help you with problems that you may encounter with your personal computer. To efficiently troubleshoot your system, treat each problem individually. This is to ensure an accurate diagnosis of the problem in case a problem has multiple causes.

Some of the most common things to check when you encounter problems while using your system are listed below.

1. The power switch of each peripheral device is turned on.
2. All cables and power cords are tightly connected.
3. The electrical outlet to which your peripheral devices are connected is working. Test the outlet by plugging in a lamp or other electrical device.
4. The monitor is turned on.
5. The display's brightness and contrast controls are adjusted properly.
6. All add-in boards in the expansion slots are seated securely.
7. Any add-in board you have installed is designed for your system and is set up correctly.

Monitor/Display

If the display screen remains dark after the system is turned on:

1. Make sure that the monitor's power switch is on.
2. Check that one end of the monitor's power cord is properly attached to the monitor and the other end is plugged into a working AC outlet. If necessary, try another outlet.
3. Check that the video input cable is properly attached to the monitor and the system's display adapter.
4. Adjust the brightness of the display by turning the monitor's brightness control knob.

The picture seems to be constantly moving.

1. The monitor has lost its vertical sync. Adjust the monitor's vertical sync.
2. Move away any objects, such as another monitor or fan, that may be creating a magnetic field around the display.
3. Make sure your video card's output frequencies are supported by this monitor.

The screen seems to be constantly wavering.

1. If the monitor is close to another monitor, the adjacent monitor may need to be turned off. Fluorescent lights adjacent to the monitor may also cause screen wavering.

Power Supply

When the computer is turned on, nothing happens.

1. Check that one end of the AC power cord is plugged into a live outlet and the other end properly plugged into the back of the system.
2. Make sure that the voltage selection switch on the back panel is set for the correct type of voltage you are using.
3. The power cord may have a "short" or "open". Inspect the cord and install a new one if necessary.

Floppy Drive

The computer cannot access the floppy drive.

1. The floppy diskette may not be formatted. Format the diskette and try again.
2. The diskette may be write-protected. Use a diskette that is not write-protected.
3. You may be writing to the wrong drive. Check the path statement to make sure you are writing to the targeted drive.
4. There is not enough space left on the diskette. Use another diskette with adequate storage space.

Hard Drive

Hard disk failure.

1. Make sure the correct drive type for the hard disk drive has been entered in the BIOS.

2. If the system is configured with two hard drives, make sure the bootable (first) hard drive is configured as Master and the second hard drive is configured as Slave. The master hard drive must have an active/bootable partition.

Excessively long formatting period.

If your hard drive takes an excessively long period of time to format, it is likely a cable connection problem. However, if your hard drive has a large capacity, it will take a longer time to format.

Serial Port

The serial device (modem, printer) doesn't output anything or is outputting garbled characters.

1. Make sure that the serial device's power is turned on and that the device is on-line.

2. Verify that the device is plugged into the correct serial port on the rear of the computer.

3. Verify that the attached serial device works by attaching it to a serial port that is working and configured correctly. If the serial device does not work, either the cable or the serial device has a problem. If the serial device works, the problem may be due to the onboard I/O or the address setting.

4. Make sure the COM settings and I/O address are configured correctly.

Keyboard

Nothing happens when a key on the keyboard was pressed.

1. Make sure the keyboard is properly connected.

2. Make sure there are no objects resting on the keyboard and that no keys are pressed during the booting process.

System Board

1. Make sure the add-in card is seated securely in the expansion slot. If the add-in card is loose, power off the system, re-install the card and power up the system.

2. Check the jumper settings to ensure that the jumpers are properly set.

3. Verify that all memory modules are seated securely into the memory sockets.

4. Make sure the memory modules are in the correct locations.

5. If the board fails to function, place the board on a flat surface and seat all socketed components. Gently press each component into the socket.

6. If you made changes to the BIOS settings, re-enter setup and load the BIOS defaults.

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
Power on	None, blank	Nil	1. CMOS jumper is set at pins 2-3.	1. Set the CMOS jumper to pins 1-2 (default).
			2. 5Vsb of PSU is insufficient. (Minimum required - 2A)	2. Replace a suitable PSU.
00	Power on -> Stopped at **00**	BIOS program starts to set VID/FID to initialize CPU. (Boot Block area).	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. Defective CPU connection.	2. Remove and reinstall the CPU.
			3. Incompatible PSU.	3. Replace a suitable PSU.
			4. No CPU power.	4. Inspect the 12V connection.
			5. Reset button short-circuited.	5. Inspect the cable that connects the reset button to the front panel connector.
00	Power on -> **00** -> Reset -> Looping	CPU VID is incorrect.	PSU does not comply with the system's requirement.	Replace a PSU that will provide adequate power to the system.
A0	00 -> C1 -> Stopped at **A0**	A0~AF Definition: Initializing memory check code.	1. Incompatible memory modules.	1. Remove and reinstall the memory modules.
			2. Mixed-up BIOS data.	2. Clear the CMOS data.
b8	00 -> C1 -> Stopped at **b8**	B0~BF Definition: Initializing memory devices check code (registers).	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. Incompatible memory modules.	2. Remove and reinstall the memory modules.
			3. Incompatible PCI devices.	3. Remove and reconnect the PCI devices.
C0	00 -> Stopped at **C0**	Initializing memory.	1. Probing for failed memory devices.	1. Make sure the memory modules are installed properly in the slots.
			2. SPD value is lost or empty.	2. Replace the memory modules.

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
C1	00 -> C0 -> Stopped at **C1** (00 -> C0 -> C1 ->) Reset -> Looping)	Detecting memory. Detecting DRAM size and type. ECC auto-detection of L2 cache.	1. Incompatible memory modules.	1. Remove and reinstall the memory modules.
			2. Overclocking issue (tight DRAM timing).	2. Clear the CMOS then load the default speed.
			3. One of the memory modules is defective.	3. Try installing a single module only.
C3/C5	C0 -> C1 -> Stopped at **C3/C5** (C0 -> C1 -> C3 ->) Reset -> Looping)	Expanding compressed BIOS code to the DRAM.	1. Tight DRAM timing (system is unstable).	1. Clear the CMOS then load the default speed.
			2. Insufficient DRAM voltage.	2. Increase the DRAM's voltage.
			3. Overclocking issue.	3. Remove and reinstall the memory modules.
CF	Shutdown -> Stopped at **CF** (Shutdown -> CF -> Reset)	Resume on S1/S3 failed.	1. Insufficient DRAM voltage.	1. Increase the DRAM's voltage.
			2. Incompatible memory modules.	2. Remove and reinstall the memory modules.
			3. Overclocking issue (tight DRAM timing).	3. Load the default DRAM speed.
			4. BIOS issue.	4. Upgrade to the latest BIOS.
E0	C0 -> C1 -> Stopped at **E0**	E0-EF Definition: Initializing PCIE device check code.	1. Mixed-up BIOS data.	1. Clear the CMOS data.
			2. Incompatible PCI devices.	2. Remove and reinstall the PCI device.

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
25	00 -> C1 -> C3 -> Stopped at **25**	Enumerating PCI bus number. Assigning memory & I/O resource -searching for a valid VGA device & VGA BIOS then placing it in C000:0.	1. Incompatible PCI devices.	1. Remove all PCI/PCIE devices and leave only the graphics card to test first. Test the devices one at a time to determine the one with problem.
			2. Incompatible USB devices.	2. Remove all USB devices including the USB keyboard and instead use a PS/2 keyboard to test.
			3. Defective graphics card. (VGA BIOS did not initialize)	3. Replace the graphics card.
			4. The graphics card was not installed properly.	4. Remove and reinstall the graphics card.
26	00 -> C1 -> C3 -> Stopped at **26**	Initializing display card. Initializing onboard clock generator. Disabling respective clock resource to empty PCI & DIMM slots. Initializing onboard PWM3. Initializing onboard H/W monitor devices.	1. Defective graphics card.	1. Replace the graphics card.
			2. Initialized wrong BIOS process. (Clock-gen circuit / Super IO circuit)	2. Clear the CMOS data.
41	C3 -> 25 -> 26 -> Stopped at **41**	Initializing the FDD device.	Detected floppy error.	Unplug the FDD cable and check for errors or check the BIOS settings.
			* Mixed-up BIOS data could be one of the causes too.	* Replace a new BIOS chip.
50	Power on -> Stopped at **50**	Initializing USB devices.	1. USB failed to boot. (BBS issue)	1. Clear the CMOS data first.
			2. Incompatible USB devices.	2. Try connecting the device to another USB port. 3. Test the USB devices one by one. 4. Set the USB power source to 5V by means of the 5V/5Vsb select jumper.

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
75	Power on -> Stopped at **75**	Initializing storage devices. (Probing for IDE devices or SATA devices)	1. Lost power source of some devices.	1. Inspect the power cable connection.
			2. Incompatible SATA or PATA device.	2. Inspect the IDE cable connection or replace another PATA/ SATA device.
			3. CD-ROM's spin took too long.	3. Remove the disc, if present, from the CD-ROM device.
7F	Power on -> Stopped at **7F** * Checksum error always appear after the BIOS default has been loaded.	BIOS setup module in progress. Reporting BIOS check errors. Waiting for keys: DEL key to load the BIOS default. F1 key to continue.	1. Checksum error occured. (Change/add devices such as CPU/ DRAM)	1. Load the optimized default setting of the BIOS.
			2. Error occured after clearing the CMOS.	2. Alter or adjust the BIOS setting.
			3. Onboard battery is depleted.	3. Replace a new battery.
			4. Overclocking issue.	4. Decrease the overclock range.
			* The battery circuit of the MB is defective.	* RMA action required.
FF	Power on -> Run to **FF** * Blank Screen	Boot attempt (INT 19h) System booted normally.	Normal Operation	Nil
			* The graphics card was not connected properly or it is defective.	* Remove and reinstall the graphics card.

POST (hex)	Debug Code Action	BIOS Program Definition	Possible Cause	Solution
79	Power on -> Prompt Stopped at **79**	There is no "79" definition on the Award BIOS code. (BIOS program executed the wrong process therefore showing the wrong POST code.)	1. Mixed-up BIOS data. 2. MB is defective. (NB chip may be defective.)	1. Clear the CMOS data. 2. RMA action required.
88	Power on -> Prompt Stopped at **88**	There is no "88" definition on the Award BIOS code. (BIOS program executed the wrong process therefore showing the wrong POST code.)	1. Mixed-up BIOS data. 2. MB is defective. (NB chip may be defective.)	1. Clear the CMOS data. 2. RMA action required.
FF	Power on -> Prompt Stopped at **FF**	Definition: BIOS process completed. (BIOS program executed the wrong process therefore showing the wrong POST code.)	1. Mixed-up BIOS data. 2. MB is defective. (NB chip may be defective.)	1. Clear the CMOS data. 2. RMA action required.

Index

Clearing CMOS Data

1.Turn-off and unplug the AC power.

2.Move the jumper cap from pins 1-2 to pins 2-3.

3.Wait for 5 seconds then move the jumper cap back to pins 1-2.

Totally Discharging the Motherboard

Unplug the AC power and remove the battery for 5 minutes th the battery and plug the AC power back on.